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Original Articles

HEMORRHAGE IN THE NEWBORN.*

H. McCLANAHAN, M.D.
OMAHA.

Hemorrhage in the newborn is either traumatic or spontaneous.

Traumatic Hemorrhage.—When hemorrhage occurs during the first twenty-four hours after delivery it is usually traumatic. In the class of traumatic hemorrhages are to be included the following: Cephalohematoma, hematoma of the sternocleidomastoid muscle, hemorrhage beneath the skin, intracranial, intra-abdominal and intrathoracic. Intracranial hemorrhage, if extensive, causes death at birth, or the infant may breathe feebly for a few moments and die. If less extensive, there are no immediate symptoms, but paralysis later. Intra-abdominal hemorrhage can usually only be surmised, and in an infant large and strong at birth, dying within a few hours, with evidences of shock, intra-abdominal hemorrhage should be suspected; but the diagnosis can be confirmed only by autopsy. Hemorrhage of the lungs is certainly rare, but I have one case, reported herewith (Case 6).

Spontaneous Hemorrhage.—In spontaneous hemorrhage the blood may be from any mucous surface or beneath the skin. By combining the statistics of Ritter of Prague, Townsend of Boston, Abt of Chicago and those herein reported, the source of the hemorrhage is as follows: Umbilical, 161; intestinal, 66; mouth, 49; stomach, 37; conjunctiva, 20; ears, 10; nose, 16; ecchymosis, 27; lungs, 1; vagina, 2. It should be understood that in many of these statistics the hemorrhage was from more than one point, but that the chief source of hemorrhage is mentioned.

Duration.—Almost all cases begin within the first ten days of life. Of 75 cases reported by Dusser, the hemorrhage began on the first day in 24, on the second in 22, on the third in 9, and from the ninth to the twelfth day in 10 cases. In the majority of cases nothing is noted as abnormal about the infant until hemorrhage appears. As a rule, the amount of blood is not large, but the danger to life resides in the fact that the hemorrhage is continuous.

In reported cases the temperature varies. It should be remembered, however, as pointed out by Holt, that the temperature varies greatly in the first days of life in the normal child.

Hemorrhage from the umbilicus usually begins later than hemorrhage from other sources. Almost all cases from this source occur from the fourth to the seventh day, and nearly always after separation of the cord. Cases of hemorrhage from the slipping of the cord during the first day of life are not included. Hemorrhage from the umbilicus is almost always parenchymatous; very few cases of gush of blood being reported. Cases may terminate fatally within twenty-four hours, and patients seldom live more than two or three days. Roch, in the first edition of his text-book, however, reports one case where the oozing continued for 18 days, the child recovering. This same infant was later on circumcised without undue hemorrhage occurring.

Hemorrhage from intestinal canal usually occurs early, that is, within the first three days. The blood, whether from the mouth, stomach or bowels, may be either dark or light in color.

Hemorrhage beneath the skin consists of petechial purpuric spots or, in a few cases, of large hemorrhagic areas. Hemorrhages from the bladder, as will be noted in the statistics, are very rare. Slight hemorrhage from the kidneys, due to uric-acid infarctions, occurs in a few cases. Hemorrhage from the ears is either from the external meatus or the middle ear. Hemorrhage from the female genitals, when occurring alone, is not serious. Cullingham has collected 32 cases of hemorrhage from this source with no deaths.

Prognosis.—Prognosis in hemorrhages of the newborn is very grave. Townsend of Boston has collected 709 cases, with a mortality of 79 per cent. In private practice each case should be a law unto itself and no case should be looked on as absolutely hopeless while life endures.

Hemorrhage and Hemophilia.—Hemorrhage in the newborn does not appear to bear any relation to hemophilia. Grandidier has collected a series of 576 hemophiliacs, and in but 12 of these cases was there a history of bleeding in early infancy, so that patients that recover show no tendency to bleeding in later life.

Hemorrhage in the newborn is a comparatively rare disease. In the Boston Lying-in Hospital there were 32 cases out of a total number of 5,225 births, or 6/10 of 1 per cent. In the Lying-in Asylum of Prague, in 13,000 births, there were 190 cases of hemorrhage, or 1.4 per cent. In the Foundling Asylum of Prague, reported by Epstein, there were 8 cases out of a total of 740 births.

Etiology.—The etiology is obscure, and hereditary syphilis is considered an important predisposing cause. In 132 cases of syphilis reported by Mracek, hemorrhage occurred in 17, or 14 per cent. In 13 cases carefully studied by Abt, there was a history of syphilis in only 2, and the last several years at the Child's Saving Institute I have seen a number of cases of hereditary syphilis, but have not seen a case of hemorrhage in any of them.

Hemorrhage in the newborn is probably due to some change in the blood or in the blood vessels. That it is a specific condition seems entirely probable from the fact that it is more frequent in lying-in institutions than in private practice, that it is a self-limited condition, ter-

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minating in death or a complete recovery, and that it does not tend to recur. In hemorrhage in infants, after the first ten days of life, it seems entirely probable that septic infection is the usual cause.

Treatment.—The important principles of treatment in these cases are: 1. To control the hemorrhage as far as this is possible. 2. To aid the nutrition of the child in every way. 3. To maintain body heat. Details of treatment will appear in the report of the cases.

Under the head of traumatic hemorrhage I report the following cases: Cephalohematoma, 5 cases. Three of these were seen in consultation. The diagnosis is usually simple, and is based on the location of the tumor, the bony ring that forms around the periphery of the mass, and the absence of pulsation. In one of these cases considerable deformity remained owing to the proliferation of bone cells. In one of the cases seen last July an incision was made and the clot turned out. This case made a prompt and rapid recovery. I suggest the propriety of this treatment in this class of cases. I have seen four cases of hematoma of the sternocleidomastoid muscle. In one of these cases there remained for several months a slight torticollis due, as I believe, to the shortening of the muscle. One case of cutaneous hemorrhage occurred in the left gluteal region and occupied an area of about four inches in diameter. The mass of blood was gradually absorbed. It was a slow breech presentation.

CASE REPORTS.

I report the following cases of spontaneous hemorrhage:

Case 1.—Referred by Dr. Ewing Brown, and was seen Sept. 18, 1898. Child normal at birth. Hemorrhage began at the umbilicus the sixth day of life after separation of the cord. When I saw the child there was constant oozing. I applied a piece of absorbent cotton dipped in Monsel's solution; over the entire abdomen I placed a mass of dough, held in place by means of roller bandage. The oozing continued and the child died the following day from exhaustion. In this case the temperature was subnormal and there was no evidence of sepsis.

Case 2.—In this case umbilical hemorrhage began on the fifth day of life after separation of the cord. When I saw the child the bandages of the body on which it was lying were soaked with blood. I adopted the following treatment: A piece of cotton saturated in a 1 to 5,000 adrenalin-chlorid solution. This was packed in the umbilical fossa. A thick piece of gauze 4 inches in diameter was dipped into a gelatin solution made by boiling Cox's gelatin in water until the solution was about the consistency of glycerin. The gauze was thoroughly soaked in this solution and applied over the cotton. This was retained in place by a roller bandage applied a number of times around the abdomen. While this dressing all became saturated in the course of a few hours, the hemorrhage seemed to cease. The dressing was left in place 36 hours and then removed. There was no further hemorrhage and the child recovered.

Case 3.—Patient was seen Aug. 16, 1901, in consultation with Dr. W. L. Curtis. The child was normal at birth and nothing unusual was noted until it was 30 hours old, when, as the child was taken from the mother's breast, she noted a large clot of blood lying below the mammary gland.

Examination.—Examination revealed that this came from the child's mouth and not the mother's nipple. I saw the child on the evening of the second day. There had been some further oozing from the mouth and also two bowel movements containing blood. The shock was not extreme. The lips were fairly good color and we gave the parents some encouragement.

Treatment.—Patient was given adrenalin extract, one-fourth grain every three hours. Warm water bottles were placed to the extremities. The mother's milk was drawn from the breast and fed to the infant with spoon, as we feared the act of suction might increase the hemorrhage from the mouth.

There was one bowel movement the following morning containing a considerable amount of dark, clotted blood, but from the third day on the child continued to improve. At the end of a week it began to gain in weight. In its second summer this child had a protracted course of bowel trouble from which it slowly recovered. At the present time it is living and well.

Case 4.—This child was seen at Fort Crook, and I quote as follows from the nurse's report: "Infant, female, born Oct. 6, 1904; weight, 9 pounds; healthy and vigorous. When 24 hours old there were signs of prostration and the child gave occasional sharp cries. When 30 hours old there was a profuse hemorrhage from the bowels containing some large clots of blood. The feet were elevated, small doses of ergot given by mouth, adrenalin chlorid with salt solution by the rectum, plenty of water and nourishment given by the mouth. Twenty-four hours later another profound hemorrhage occurred with shock. Pulse could not be felt. Fontanels depressed. Respiration distinctly Cheyne and Stokes. Small doses of bismuth with hydrastis were given by the mouth. Normal salt solution was given by hypodermoclysis. There was no temperature at any time, no tympany, no further hemorrhage. The child made a rapid recovery." This patient is now in my care for an umbilical hernia and has never had any hemorrhage and is in every way a normal child.

Case 5.—This child was born prematurely. The mother had been under my care for some months before confinement. She went into labor on the morning of Jan. 5, 1905, and as it was not possible for me to be with her during the day, Dr. Ellis very kindly took charge of the case. He reported to me late in the afternoon that the cervix was well dilated and the head down on the perineum. We met at the patient's house at 5 o'clock and decided to apply the forceps. Delivery was accomplished with very little difficulty.

I left the patient in charge of Dr. Ellis and did not see her again. Dr. Ellis reported to me as follows: "The child, a male, was born at 5:30 p. m., Jan. 5, 1905; normal presentation, forceps delivery; weight, 8 pounds. The child cried lustily and appeared in every way normal. There was great difficulty in controlling the hemorrhage from the cord, as it had to be tied several times during the first hour. I saw the child again at 10 p. m. of the same night and found it bleeding profusely from the mouth, death occurring within half an hour from the time the bleeding started from the mouth. I can not say absolutely whether the hemorrhage was from the lungs, stomach or mouth. The blood was a bright color, however." This case illustrates the fact that a child may simply die from loss of blood within a very short time.

Case 6.—The following case (twins) was reported to me by Paul H. Luddington, Omaha, Neb.

Family History.—One child living in good health, aged 4. There has been no miscarriage. Husband is apparently in perfect health. No specific history was obtainable.

The case was uneventful except for the large amount of liquor amnii. Labor began at 11 p. m., June 23, 1904. Progress was normal. At 3:45 a. m. a child was born, normal presentation, cord very thick. In 15 minutes the second child was born in foot presentation. This child was slightly asphyxiated but easily revived. A single placenta, usual delivery. This patient did not expect to be confined until six weeks later, although the date was uncertain. Children were both males, weighing about 6 pounds each, perfectly formed.

The following day both children were seen by me and appeared normal except weak and puny. Seventy hours after birth the aunt of the children noticed one of them looking cold and picked it up. The child gasped, spit up a mouthful of bright red blood and died.

Autopsy.—Twelve hours after death. Abdominal cavity normal. Head not examined. Left lung entirely filled with blood. No blood in pleural cavity. One section of lung filled with blood and very little air escaped. Left lung normal.

In this case it does not seem probable that the hemorrhage could have been due to traumatism, but was spontaneous due to inherent weakness of vascular supply to lung.

DISCUSSION.

DR. ISAAC A. ABT, Chicago, agreed with Dr. McClanahan in his examination of cases. It is pretty well established that all young infants have a tendency to bleed on rather slight provocation. It can hardly be gainsaid that hereditary syphilis plays a certain rôle in the etiology of these hemorrhages. Another etiologic factor is infection, either of the ordinary pyogenic microörganisms, the streptococcus, staphylococcus or even the colon bacillus. This is particularly shown in clinics abroad. The traumatic cases do not belong to the same class as those of spontaneous hemorrhage in which the hemorrhage is under the skin. In his own cases he doubted whether the loss of blood was sufficient to cause death. It seemed that the children died rather from the attending sepsis than from loss of blood. In no case was loss of blood very marked, being more of an oozing of the mucous membranes, kidneys and bowels.

DR. J. C. LITZENBERG, Minneapolis, reported a case of hemorrhage from the mouth and bowels 36 hours after birth and showing symptoms of extreme prostration which he did not think due to the amount of hemorrhage. The child died when 50 hours old. A postmortem was held and careful bacteriologic examination made. From the cardiac opening of the stomach to the rectum were small submucous hemorrhages gradually growing larger as the small and large intestines were dissected through into the rectum. The bowel itself contained a quantity of blood, and the bacteriologic findings of cultures taken from the hemorrhagic spots showed a pure culture of the bacillus of Friedlander. He thought the real cause of death, as the last speaker said is often the case, was not the amount of hemorrhage, but the sepsis, because a lobular pneumonia was found in which was a pure culture of the bacillus of Friedlander.

DR. MALINDA K. GERMANN, Quincy, Ill., reported a case of fatal hemorrhage in a child. The delivery was slow, but there was nothing abnormal about the labor. Immediately after birth, however, the child had a profuse hemorrhage of the nose and mouth. The cause was probably in some inherent abnormality of the vascular system of the lungs, for Dr. Germann believed death was caused by the hemorrhage.

DR. EFFA DAVIS, Chicago, called attention to toxemia in the mother as a cause of hemorrhages in the new born. The toxemias of pregnancy are so varied and often of such mild degree that a careful inquiry must be made to ascertain their presence previous to the delivery, but knowing how profoundly the child may be affected by such a condition, even to the point of death *in utero*, it is worth while to inquire along this line in otherwise puzzling cases. Dr. Davis has seen several which she attributed to such a condition.

DR. MCCLANAHAN believed that the majority of the deaths are not due to the loss of blood, but to the septic condition which induces hemorrhage, although in two cases he had reported that death was due to the hemorrhage. Unfortunately, bacteriologic tests were not made and he, therefore, did not allude to that subject. He is rather inclined to limit the cases of hemorrhage in the new born in which death is due to the loss of blood. Again, while the loss of blood may not seem dangerous to life, yet the condition may be exceedingly dangerous because of the probably infectious nature of that which produced or induced the hemorrhage.

Submucous Septal Resection.—Mouret and Joubert, in their report on the treatment of septal deviations to the French Society of Laryngology (*Arch. Internat. de Laryngologie, etc.*, xxi, No. 3, suppl., May-June, 1906), hold that among all the operative methods only one is adaptable to all cases, namely, the submucous resection. If not done too timidly and if all the deviated portions are removed, it gives invariably an excellent result, and it is the only procedure applicable to deep osseous deviations. They consider the operation delicate and laborious, but they say that it is easily borne by the patient and gives a perfect result as regards nasal permeability. It also corrects in an esthetic point of view certain external deformities and is generally as well adapted as any other method.

BENIGN CYSTIC EPITHELIOMA.

JOHN V. SHOEMAKER, M.D., LL.D.

Professor of Materia Medica; Therapeutics; Clinical Medicine and Diseases of the Skin in the Medico-Chirurgical College and Hospital.

AND

L. NAPOLEON BOSTON, A.M., M.D.

Adjunct Professor of Medicine, Medico-Chirurgical College; Director of Laboratories of Research in the American Hospital for Diseases of the Stomach; Physician to the Philadelphia Hospital.

PHILADELPHIA.

Benign cystic epithelioma has been reported under a variety of titles, all of which were designed to describe, more or less closely, the pathologic changes of the individual case under consideration, or to describe the views held by the individual making the report. Cases of cutaneous epithelium have been described under a variety of captions, and among these titles are to be found hydradenoma, hemangio-endothelioma, syringocystoma, epithelioma adenoid cystium (Brooke[1]), tricho-epithelioma (Jarisch[2]), akanthoma adenoides cystium (Unna) and benign cystic epithelioma (Hartzell[3]). Following the suggestions of these writers, White,[4] Balzer and Ménétrier,[5] Balzer and Grandhomme,[6] Phillippson,[7] Wolters[8] and Hartzell[3] have added examples of this clinically benign form of epithelioma. From the literature[9] we have been able to collect references to but twenty-four reported cases and special articles discussing benign cystic epithelioma.

Patient.—Miss J. E., aged 22, American, complained of no subjective symptoms; her appetite had always been good and the bowels regular. She first menstruated when 13 years of age and her menstrual periods have been regular since, not painful, and of the 28-day type.

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1. Brooke: "Epithelioma adenoides cystium," Monats. f. prakt. Derm., 1892, vol. xv, p. 589.

2. Jarisch: "Zur Lehre von den Hautgeschwulsten," Archiv. f. Derm. u. Syph., vol. xxviii, p. 163.

3. Hartzell: "Benign Cystic Epithelioma," Amer. Jour. of Med. Sci., Philadelphia, September, 1902.

4. White: Jour. of Cutaneous and Genitourinary Diseases, 1894, p. 477.

5. Balzer and Ménétrier: Archiv. de physiol., 1885.

6. Balzer and Grandhomme: Ibid., 1886.

7. Phillippson: "Die Beziehungen des Kolloidoilium (M. Wagner), der kolloiden Degeneration der Cutis (Besnier) und des Hydradenoma (Darier-Jacques) zu einander," Monats. f. prakt. Derm., vol. xi, 1890, No. 1.

8. Wolters: "Epithelioma adenoides cystium," Archiv. f. Derm. u. Syph., vol. lvi, 1901, p. 90.

9. In addition to the authors cited in the article other references may be consulted as follows: Jaquet de Darier: Annal. de Derm. et Syph., 1887, vol. xi, No. 8, p. 317; Quinquand: Congrès international de dermatologie de Paris, 1889, and Monats. f. prakt. Derm., vol. ix, p. 20; Török: "Das Syringocystadenom," Monats. f. prakt. Derm., vol. viii, p. 116. Hoggan: "Zur pathologischen Histologie der schmerzhaften subcutanen Geschwulst," Virchow's Archiv., vol. lxxxii, p. 233, and Jour. of Anat. and Phys., 1884. Petersen: "Ein Fall von multiplen Knäueldrüsengeschwulsten unter dem Bilde eines Nävus verrucosus unius lateris," Archiv. f. Derm. u. Syph., 1892, vol. xxiv, p. 919 and "Beiträge zur Kenntniss der Schweissdrüsenerkrankungen," Ibid., 1893, p. 441; Bernard: "Contribution à l'étude du syringocystadénome," Thèse de Paris, 1897; Knauss: "Eine Geschwulst der Schweissdrüsen (Cylinderepitheliom)," Virchow's Archiv., vol. cxxvi, p. 561; Bartel: "Ein Fall von Cystadenoma papilliferum der Schweissdrüsenausführungsgänge mit Hypertrophie und cystenbildung der Schweissdrüsen selbst," Zeitft. f. Heilk., 1900, vol. xxi, (new series, vol. i), Division for Pathologic Anatomy, p. 200; Wolters: "Haemangioendothelioma tuberosum multiplex n. s. w." Archiv. f. Dermat. u. Syph., vol. liii, 1900; Fordyce: "Multiple Benign Cystic Epithelioma of the Skin," Jour. of Cutaneous and Genito-urinary Diseases, 1902, p. 459; Verneuil: "Etudes sur les tumeurs de la peau et quelques maladies des glandes sudolpares," Archiv. gén. d méd., 1854, vol. iii, pp. 447 and 693; Lotzbeck: Virchow's Archiv., vol. xvi, p. 160; Thierfelder: "Ein Fall von Schweissdrüsen-Adenom," Archiv. f. Heilk. vol. xi, 1870, p. 401; Lücke: "Handbuch der Chirurgie von Pitha-Billroth," vol. ii, part 1, p. 276; Perry: "Adenomata of the Sweat Glands," Atlas of Rare Cutaneous Diseases, iii, 1890, vol. i.

Family History.—Her parents and brother and sister are living and in good health. Her maternal grandparents are both living and well, and are about 80 years old. The paternal grandparents both died at 80 years of age, cause of death, senility. Her uncles and aunts are all living and well. A second cousin died of phthisis. The family history is negative so far as carcinoma is concerned.

Previous Personal History.—As a child she had measles, whooping cough, and varicella; she has always enjoyed good health since until her present trouble.

Social History.—She is single and lives with her parents. In June, 1905, she graduated from a woman's college, since which date she has spent her time in reading and doing some housework. Her habits are good.

Present Illness.—This illness dates back about four years when she first noticed a pigmentation in the right infraclavicular region, and but slight pigmentation on the right arm, which has noticeably increased during the past two years. She is uncertain as to whether or not the nodules were present at first. At times, especially after violent exercise, she has had a slight itching sensation along the courses of the pigmentation. The skin overlying these pigmented areas is hypersensitive.

Physical Signs on Admission.—An examination shows a female fairly well developed, five feet four inches tall; weight 115 pounds. The skin over her body is warm and moist. In the right infraclavicular region is a congregation of nodules which extend like a chain of enlarged lymphatic glands to the shoulder, and down the arm and forearm. These nodules on the arm feel hard and are of the size of a pea; and the skin along this area is pigmented, the color being dark red or purplish. There is also a similar spot of pigmentation in the infrascapular region of the same side, but no nodules are palpable. Otherwise, the glands are normal except in the postcervical region of the left side where there is one gland the size of a marble.

Chest: Inspection, palpation, percussion and auscultation revealed no additional abnormalities except that the heart's second pulmonic sound is short and sharp in character.

Abdomen: Nothing abnormal could be elicited.

Clinical Laboratory Findings.—The urine was of high color, specific gravity 1022, moderately acid in reaction, and gave evidence of a trace of indican, and contained a small number of cylindroids. There was no evidence of disease of the kidneys, nor of imperfect elimination through these organs.

First Blood Examination: Hemoglobin, 75 per cent.; red cells, 3,800,000 per c.mm.; white cells, 8,600 per c.mm.

Stained Blood: All red cells stained feebly and were deficient in hemoglobin. Few red cells were distorted (poikilocytes). Many red cells were under size (microcytes). A few red cells appeared as shadows except for a marginal band of stained tissue. There was no basic or other degeneration of red cells. Leucocytes stained normally.

Differential count showed the following percentages: Polynuclears, 66 per cent.; lymphocytes, 30; eosinophiles, 0.5; large mononuclear, 2.5; transitionals, 1.0.

Second Examination.—Blood examination made three weeks later gave: Hemoglobin, 75 per cent.; red cells, 3,100,000 per c.mm.; white cells, 10,600 per c.mm.

Living blood showed rouleaux formation feeble, and the viscosity greatly reduced. The red cells were disseminated throughout the plasma, many of them swollen, pale and at times distorted.

The stained blood revealed a faint staining with eosin, many of the red cells stained as mere shadows, while some of the larger erythrocytes displayed a central area surrounded by a peripheral band of well-stained protoplasm. The central pale spot was enlarged in all the red cells. Few of the red cells showed punctate areas of degeneration (punctate basophilia). Poikilocytosis was well marked.

Differential leucocyte count showed the following percentages: Polynuclear cells, 67; lymphocytes, 24; large mononuclear, 1.5; eosinophiles, 2.0; transitional, 5.5.

Third Examination.—An examination of the blood six weeks after treatment was established showed: Hemoglobin, 86 per cent.; red cells, 3,800,000; white cells, 4,600. Rouleaux formation was slightly below the normal. Red cells were somewhat pale, and showed but slight abnormalities in size and shape.

Stained Blood: The red cells stained feebly as a rule, and different portions of their protoplasm stained irregularly, but there were no over-stained cells. A differential count showed the leucocytes to be normal both as to staining properties and varieties.

The general features of the blood were that of a moderate grade of secondary anemia. At the first examination it was found to concern mostly the hemoglobin, yet the red cells suffered some reduction. The third examination of the blood, which was made six weeks after the institution of treatment, showed a decided improvement in the general blood condition.

Histologic Examination of Growths.—A tumor about the size of a hazel nut was taken from the skin of the anterior surface of the right chest. Microscopic examination of the tumor disclosed the fact that the surface displayed the usual characteristics of epidermis, except that it was slightly hypertrophied. The corium presented decided deviation from that of normal skin, and this condition involved both the reticular and subcutaneous layers. There were to be seen numerous small, irregular and at times oval aggregations of deeply stained cells (tumor cells), many of which were small round cells; others contained spindle cells. These masses of deeply stained cells were found to vary greatly in both size and form, some being oval, nearly round, elongated, while those situated near the hair follicle showed this feature to a less marked degree. Often these cells were seen to extend for some distance along the septa of connective tissue, and in some of the growths these slender tracts of epithelial cells extended out in finger-like projections through the fibrous stroma. In a few of the masses the marginal epithelium appeared to be more or less imperfectly columnar, although this feature was never prominent.

Source of Growth.—Study of these epithelial cells under a 1/12 oil-immersion objective showed them to be indistinguishable from the cells of the deeper layers of the epidermis. In many of the sections studied hair follicles showing abnormal growths were demonstrable. At times this growth of epithelium was seen to branch directly from the sides of the hair follicle, this branching taking place near the junction of the upper with the lower two-thirds of the follicle; and it was common to find a direct communication between finger-like projections of the epithelial cells and other portions of the hair follicle. At the bulbar portion of the hair follicles there were often decided proliferations of the epithelium of the follicle, and there were to be seen finger-like projections which appeared to be formed of the younger cells.

In the immediate vicinity of the follicles showing proliferation of their epithelium were older growths. These masses of epithelium at times encroached on the sebaceous glands, but it was impossible to demonstrate any connection between the new growths of epithelium and the glandular tissue.

Second Study of Growths.—In view of the great rarity of epithelial growths originating from the hair follicles it was deemed advisable to remove a second small tumor from the skin and to study it in serial sections and this was accordingly done, forty sections being studied. Through this latter method of study it was possible to follow growths of epithelium to the hair follicles. This second study revealed several small cysts and in one instance a cyst apparently expanded the bulbar extremity of the hair follicle. Other findings were corroborative of those described in the first specimen. This tumor showed the aggregations of epithelium to be larger than did the first specimen examined, and the columnar arrangement of the cells was less apparent.

Deductions.—From the above findings it appears self-evident that these neoplasms originated from the hair follicles and exemplify what has previously been described as tricho-epithelioma. These benign tumors of the skin have received but little study by general pathologists.

DISCUSSION.

In most of the cases furnished by the literature, small cysts have formed a prominent feature of the tumor masses, but in our case only few cysts were detected, and this may be explained through the fact that these growths were extremely young, having existed but a few months.

In Hartzell's case[10] more extensive cyst formation appears as the only striking difference between the findings he describes and those presented by our case.

The microscopic findings in our case were practically identical with those described by the other writers. In discussing the subject of benign epithelioma Hartzell[10] states:

> Either neoplasms differing widely in origin and nature may resemble one another so closely histologically as to be practically indistinguishable, which is unlikely; or those who believed that they were able to trace the origin of these growths to the sweat gland ducts or to the blood vessels based their conclusions on insufficient evidence.

We desire to thank Dr. Hartzell for making an examination of some of the sections from the case herein reported.

Perthes[11] has described, both clinically and histologically, two cases, each of benign cystic epithelioma of the lip in the Chinese. It has been also demonstrated that clinically benign neoplasms of the skin orginate both from the deeper layers of the cutaneous epithelium and from the hair follicles.

A STUDY OF THE BLOOD IN BANTI'S DISEASE BEFORE AND AFTER SPLENECTOMY.*

WALTER L. BIERRING, M.D.
Professor of Medicine, State University of Iowa.
AND
ENFIN EGDAHL, M.D.
Instructor in Pathology, State University of Iowa.
IOWA CITY, IOWA.

The patient on whose case this study is based was admitted to the University Hospital, Nov. 15, 1904, and presented the following history:

Patient.—Mr. C. F. H., aged 38, traveling man, married, having 3 children in good health, was referred by Dr. W. E. Patterson and entered the hospital complaining of feeling of heaviness in abdomen with bloating after meals.

History.—Father died at age of 72 years from hernia; mother aged 72, alive and well; three sisters alive and well; one brother died, aged 44, of typhoid fever.

Patient used alcohol moderately until beginning of present illness; tea and coffee moderately. He has had gonorrhea a number of times; denies lues; had common diseases of childhood. He had spinal meningitis at 7 years of age. While in the South, at the age of 21, he had malarial fever, paroxysms occurring, as he claims, only once a week. These symptoms persisted for 3 or 4 years, or until patient moved to Colorado, when they soon ceased and have not recurred. There was no history of ague-cake spleen. Patient was jaundiced at the time. In 1890 an abscess developed on the left side of chest, which was opened, and failed to close for one year, healing and breaking out in different points on the surrounding area.

History of Present Trouble.—In 1902 patient began to feel depressed, had aching and heavy feeling in the left side, with a sharp pain under the ribs on exertion; continued to work, but nearly fainted a number of times. At Christmas, 1902, his wife first noticed a tumor on the left side of the abdomen. Soon after this the patient consulted Dr. Gilchrist of Iowa City, who made a diagnosis of splenic tumor. In September, 1902, the patient went to Chicago and received several *x*-ray treatments, but without help, and developed a painful burn on left side of the abdomen over enlarged spleen area, which has not yet healed, but is no longer painful. During the last two years patient had done no work and, except for burn, has felt fairly well. His appetite is good, bowels are regular and he sleeps fairly well. On exertion he tires easily and suffers with dyspnea. There is no hematemesis, but he has frequent attacks of nosebleed, although these have been present more or less since youth. In April, 1904, he had a marked distension of the abdomen for 3 days, for which paracentesis abdominis was advised but not carried out.

Present Condition.—Nov. 15, 1904: Patient is moderately emaciated, has some cachexia, skin is slightly yellow, sclera is jaundiced; pulse 94, regular; fair tension, vessels soft and elastic, systolic pressure 110; heart's area not increased; soft systolic murmur heard over entire pericardium, otherwise sounds are normal. Lungs are normal.

Abdomen is distended, especially in left upper quadrant. There is a diffuse scar on left side, the center of which is unhealed; palpation reveals a large tumor on left side of abdomen which corresponds to the spleen, the lower border of which extends 10.5 cm. below umbilicus level and the right border 8.5 cm. beyond the midline. The surface is smooth except the right border, which is deeply notched. The liver is distinctly palpable, surface not tender but irregular. Small amount of free fluid in the abdomen. Kidneys are not palpable; urine is negative. There are no enlarged lymph nodes.

Blood: Hemoglobin, 65 per cent. (v. Fleischl); red cells 2,798,800; whites, 3,689. Differential count of leucocytes: Polymorphonuclear neutrophiles, 75.5 per cent; small mononuclears, 16 per cent.; large mononuclears, 3.3 per cent.; eosinophiles, 2.63 per cent.; transitionals, 1.12 per cent.; mast cells, .37 per cent.; indeterminates, .93 per cent. Daily examinations of the blood were made for 12 days without disclosing any marked change.

Diagnosis.—The splenomegaly, leucopenia and secondary anemia permitted a diagnosis of splenic anemia, but the mild icterus, suspicion of ascites and hepatic cirrhosis, which was subsequently corroborated at the operation for splenectomy, made a diagnosis of so-called Banti's disease seem more applicable.

Operation.—On Nov. 28, 1904, a splenectomy was performed by Dr. William Jepson. At the operation the liver was found to be enlarged, surface granular and marked by deep, irregular scars. About 500 c.c. of clear serous fluid was removed from the abdominal cavity. Recovery from the operation was uneventful.

Postoperative History.—The blood changes following the operation were closely followed. Five days after operation there was a total white count of 15,400, and from this time until December 10, 12 days after operation, there was a steady increase except for two slight variations in the white blood count, which reached 24,000 on December 10. It fell suddenly to 10,200 on December 14. On December 17 there was a slight increase in the count, showing 14,000. From then on there was a steady decrease. On the day of discharge, Jan. 4, 1905, the total white count was 6,000.

Red Blood Corpuscles: Immediately following the operation there was a sudden fall, reaching 3,120,000 on December 3, 5 days after operation. From this time on there was a steady uniform increase up to December 21, when the count was 4,200,000, higher by 1,500,000 than on admission. On January 4, the day of discharge, the count was a trifle less than on December 21, but still over 4,000,000.

Hemoglobin: The hemoglobin on admission was 65 per cent., estimated by the v. Fleischl instrument. It ran a course parallel with the erythrocytes, and the day of discharge showed 85 per cent.

Differential Counts: Five days after operation a count showed the following: Polymorphonuclear neutrophiles, 72 per cent.; small mononuclears, 11.4 per cent.; large mononuclears, 15 per cent.; eosinophiles, 1 per cent. This count is of interest as it shows the great increase in relative numbers of the large mononuclears from 3.3 per cent. before operation to

10. Hartzell: "Benign Cystic Epithelioma and Its Relationship to So-called Syringocystadenoma, Syringocystoma and Hemangio-Endothelioma." Brit. Jour. of Dermatology, October, 1904, p. 361.

11. Perthes: "Ueber gutartige Epitheliome, wahrscheinlich congenitalen ursprungs," Deuts. Zeitft. f. Chir., 1905-1906, p. 283.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

15 per cent. 5 days after operation. There is a falling per cent. in the number of small mononuclears and polymorphonuclears.

December 6 a count revealed: Polymorphonuclear neutrophiles, 65.4 per cent.; large mononuclears, 15.7 per cent.; small mononuclears, 12.7 per cent.; polymorphonuclear eosinophiles, 3.5 per cent.; transitionals, 2.1 per cent.; mast cells, 0; indeterminates, .43 per cent.; 697 cells counted. This count shows a marked increase in large mononuclears, a slight increase in eosinophiles and transitionals, and a decrease in polymorphonuclear neutrophiles and small mononuclears, with total absence of mast cells.

On December 10, the day of the highest leucocytosis, a strange phenomenon was noticed. The small mononuclears suddenly increased from 12.6 per cent. in the previous blood count to 23.5 per cent.; the large mononuclears fell from 15.7 per cent. to 8.1 per cent., the count being as follows: Polymorphonuclear neutrophiles, 65.4 per cent.; polymorphonuclear eosinophiles, 3.5 per cent.; small mononuclears, 23.5 per cent.; large mononuclears, 8.1 per cent.; mast cells, 0; indeterminates, 0; 429 cells counted. The subsequent changes in the different blood elements are revealed in the table.

TABLE OF BLOOD EXAMINATIONS.

Date	Hemoglobin %	Red	White	Polymorphonuclears %	Small mononuclears %	Large mononuclears %	Eosin %	Transit. %	Mast. %	Nucl. red	No. of white cells counted
11/13, '04..	65	2,789,000	3,689	75.5	16.	3.3	2.63	1.12	.37	1	420
11/26, '04..	65	3,416,000	4,800	78.5	16.	3.3	2.63	1.12	....	1	560
11/28, '04..	Splenectomy										
11/30, '04..	60	2,820,000	13,200	56.1	12.6	9.8	1.18	1.	....	1	620
12/2, '04...	65	3,120,000	15,400	72.	11.4	15.	1.	....	....	1	540
12/6, '04...	75	3,645,000	18,000	65.4	12.7	15.7	3.5	2.1	....	1	697
12/10, '04..	75	3,520,000	24,000	65.5	23.5	8.1	3.4	....	....	1	429
12/14, '04..	70	3,632,000	10,200	60.6	20.6	11.8	4.4	1.6	.46	1	432
12/17, '04..	75	3,864,000	14,000	65.	21.1	10.7	1.2	.25	.12	1	789
12/21, '04..	80	4,360,000	12,120	63.2	19.6	11.2	2.1	.32	....	1	560
12/28, '04..	80	4,180,000	48,800	64.8	20.	11.6	1.8	.48	.18	1	480
1/2, '05....	85	4,165,000	7,100	63.6	26.2	9.4	2.4	1.2	.24	1	450
1/4, '05....	85	4,120,000	6,000	60.2	24.6	10.8	2.9	.42	....	1	510
9/25, '05...	75	3,820,000	6,800	64.4	22.4	10.4	2.8	....	....	..	420
9/28, '05...	75	3,910,000	7,100	61.8	24.8	9.2	3.2	....	....	1	620
5/5, '06....	65	4,288,000	12,000	46.7	36.1	8.2	2.1	....	.1	1	304
5/8, '06....	70	4,608,000	11,000	47.1	38.5	8.07	4.9	.45	.9	..	223

When he appeared at the hospital for examination, in September, 1905, his general condition was much improved, but he was distressed by a discharging fistula at the site of a drain placed in the left side of the abdomen at the time of the operation. After receiving surgical treatment for this condition he returned home.

He was readmitted May 2, 1906, at which time his general health appeared good, but he was troubled by a marked distension of the abdomen. Examination revealed a high degree of ascites present, and 1,400 c.c. of clear serous fluid was removed May 8, 1906. Although the number of white cells in the last count has increased to 11,000, the lymphocytosis still prevails. At no time has an enlargement of the lymph nodes or changes in the thyroid gland been observed.

REMARKS.

Summarizing the results obtained in the study of the blood of our patient, we have, first, before operation, blood characterized by anemia of secondary type, low per cent. of hemoglobin and leucopenia; second, after splenectomy a slight fall in red cells, then a rise, a leucocytosis reaching its maximum twelve days after operation and characterized by a relative increase in the mononuclear leucocytes, especially the large mononuclears; third, the absence of myelocytes and the scarcity of nucleated reds, both before and after sphlenectomy.

The blood examination in the case under consideration having been described, it may be of interest to make comparison with the findings of others. Most observers have noticed a decrease in eryfhrocytes immediately after operation, but Jordan[1] states they may increase as frequently as decrease. What the factors are that bring about the change can not be definitely stated. White says that, as a rule, after laparotomy of any kind, there is a slight increase of white blood cells and a decrease in the red cells, apparently due to ether.

LITERATURE.

The reported cases of splenectomy, as a rule, show a leucocytosis following the operation. Although there is a general increase of all the different kinds of white elements normally present in the blood, most of the cases show a relatively larger increase in the lymphocytes. In this case the large mononuclear leucocytes showed relatively the greatest increase. A number of observers have noted that a year or two after splenectomy the eosinophiles will show an increase in numbers. The hemoglobin follows the variation in reds very closely. Splenectomy is followed by an increase in size of the lymphatic glands, and this may possibly explain the lymphocytosis so frequently seen. Some report enlargement of the thyroid gland and hyperemia of the bone marrow.

The blood findings in our case, before splenectomy, of 3,796,000 red cells, 3,680 whites and hemoglobin 65 per cent., is typical of those usually described in connection with splenic anemia. In Osler's[2] series of cases the average was 3,425,000 red cells, 4,250 whites and 47 per cent. hemoglobin, nucleated reds and myelocytes being rare. The differential counts of uncomplicated cases in Lossen's[3] summary show nothing of significance. Of the 20 cases of Banti's disease reported as such by Banti,[4] Osler,[2] Cohen and Rosenberger,[5] Taylor,[6] Bessel-Hagen,[7] Umber,[8] Kausch,[9] Pribram,[10] Chiari,[11] Moor,[12] Roger,[13] Kast,[14] Galvagni[15] and Lossen[3] the blood findings are typical of those of splenic anemia.

The more interesting blood findings seen after splenectomy are also essentially the same in the two disease conditions. Umber[8] has reported one of the most typical cases of Banti's disease, having had the opportunity of observing the patient a long time, while it presented the characters of a splenic anemia, and then with the symptom complex of Banti before and after splenectomy, noted a blood finding before splenectomy of hemoglobin 45 per cent., red cells 2,483,000, white cells 8,000, leucocytes proportionally normal. Soon after the operation an increase occurred in the number of red and white cells and hemoglobin percentage. Three months following the splenectomy the hemoglobin was 90 per cent., red cells 4,578,000, white cells 11,700, the polymorphonuclear leucocytes remained about the same, the lymphocytes diminished at first, then increased beyond the normal, after which they gradually dropped to normal proportions. The eosinophile polymorphonuclears varied from 1.4 per cent. to 5 per cent., and at the

1. Jordan: Grenzeb. d. Med. u. Chir., 1903, vol. xi.
2. Osler: Am. Jour. Med. Sci., 1900, January; also Edin. Med. Jour., 1899, p. 441.
3. Lossen: Grenzgeb. der Med. u. Chir., xiii, 1904.
4. Banti: "L'Anemia Splenica," Florence, 1882; also, Ziegler's Beitr. z. path. Anat., vol. xxiv, 1898.
5. Solis-Cohen and Rosenberger, R. L.: Trans. Coll. Phys., Philadelphia, vol. xxvi.
6. Taylor: Lumleian Lectures, 1904.
7. Bessel-Hagen: Archiv. f. klin. Chir., vol. lxii, p. 168.
8. Umber: Ztschr. f. klin. Med., vol. xxv, 1904.
9. Kausch: Jahresber. d. schles. Gesell. f. vaterl. Kult., 1902, p. 286.
10. Pribram: Prager. med. Wochschr., 1902, No. 9.
11. Chiari: Prager med. Wochschr., 1902, No. 24.
12. Mohr: Berl. klin. Wochschr., 1903, No. 46.
13. Roger: Presse Méd., 1904, No. 57.
14. Kast: Wien. med. Wochschr., 1903.
15. Galvagni: Clin. Med., vol. xviii, No. 17.

last count .66 per cent. The late eosinophilia noted in our case and usually observed after splenectomy is no more characteristic of splenic anemia than Banti's disease and is not necessarily always a postsplenectomy phenomenon.

v. Decatella and Hoffbauer[16] report a case of splenic anemia with marked leucopenia and an eosinophilia of 4.3 per cent. Pribram[16] notes in a case of Banti's disease in which splenectomy was not performed 3 per cent. of eosinophiles, and Lossen[3] reports as high as 10 per cent. in a case before splenectomy.

As to the significance of these various blood changes one is mindful of the fact that in hypertrophy of the spleen from whatever cause a decrease in hemoglobin, in erythrocytes, and in many cases in the white corpuscles is very likely to follow. How this leucopenia is produced is difficult to explain from our present knowledge of the hematopoetic function of the spleen.

The explanation for the secondary anemia accompanying splenic hyperplasia rests as yet more or less on a hypothetical basis. Harris and Herzog[17] advanced the explanation that the great increase in endothelium in the venous capillaries is associated with destruction of the erythrocytes, possibly by means of the production of a chemical substance. These histologic changes have been observed only in a few instances, so that they can not be regarded as typical of the diseased condition.

The favorable results following splenectomy in both splenic anemia and Banti's disease speak in favor of the spleen being in some way the cause of the poor blood condition seen in these diseases.

The lymphocytosis noted following splenectomy must be regarded as an attempt at compensation. In making a summary of all splenectomies recorded Stachelin[18] found in spleen disease reports, but very few cases in which it did not appear either sooner or later.

Eosinophilia is usually noted sooner or later in human splenectomies. A high grade eosinophilia has been produced experimentally by Ehrlich and Lazarus[19] in splenectomizing guinea-pigs.

If the eosinophiles are to be regarded as having their source in bone marrow, the scarcity of myelocytes and nucleated red cells rather points against any great compensatory activity on the part of the marrow in the disease in question.

In considering the blood findings of the two diseases, splenic anemia and Banti's disease, before and after splenectomy, one is led to the conclusion that, whatever the nature of the disease process or the causative influence, the blood-forming organs are not particularly concerned. The more likely points of attack are the vascular channels and tissues of the spleen and in time also those of the liver.

DISCUSSION.

DR. MAXIMILIAN HERZOG, Manila, P. I., said that for several years he had a chance to examine the blood of a patient in whom a splenectomy had been performed for splenic anemia. In this case the eosinophilia became very marked after the splenectomy, and persisted for years. Dr. Herzog does not know what finally became of the patient. A typical eosinophilia is not always produced in animals after splenectomy. Dr. Herzog said that during the last two or three years he has splenectomized the white rats of three successive generations. The object of this work was to produce certain well-characterized blood changes and to find out whether or not such an acquired change could be inherited by the offspring. One of the most important questions in biology is whether or not acquired properties can be inherited. Since the blood changes in the splenectomized rats were not very constant and characteristic, nothing came of this work. Physicians, he said, are still in the dark as to Banti's disease. Dr. Herzog called attention to the fact that splenomegaly, with or without cirrhosis of the liver, is very common in the tropics, and he has seen many cases among his postmortem material encountered during the last two or three years in Manila. He referred, he said, only to cases in which there was neither a malarial nor any other well-defined basis explaining the condition of the spleen or liver. After ruling out such well-understood cases, there still remain many of splenomegaly for which no etiologic explanation can yet be offered. The etiology of Banti's disease remains as mysterious to-day as it has ever been.

16. v. Decatella and Hofbauer: Ztschr. f. klin. Med., vol. xxxix, 1900.
17. Harris and Herzog: Deutsch. Ztschr. f. Chir., vol. liz, p. 567.
18. Stachelin: Deutsch. Arch. f. klin. Med., 1903.
19. Ehrlich and Lazarus: Nothnagel's "Specialle Path. u. Therap.," vol. viii.

VITAL POINTS IN THE TECHNIC OF SUPRAPUBIC ENUCLEATION OF THE PROSTATE FOR BENIGN ENLARGEMENT OF THAT GLAND.*

E. HURRY FENWICK, F.R.C.S. (ENG.)
Surgeon to, and a Lecturer on Clinical Surgery at, the London Hospital.
LONDON, ENG.

It is generally conceded that, step by step, the operation of enucleation of the prostate from its capsule, whether performed suprapubically or perineally, has justly attained the recognized rank of a curative procedure for that urinary obstruction and destruction which is caused by benign enlargement of the gland.

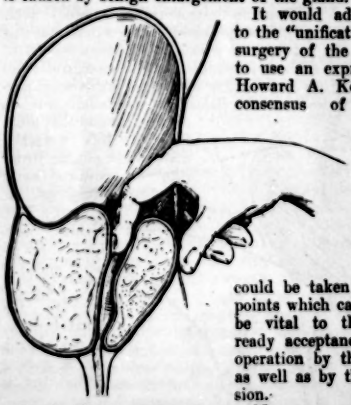

Fig. 1.—Finger entering prostatic urethra.

It would add greatly to the "unification of the surgery of the world"—to use an expression of Howard A. Kelly—if a consensus of opinion could be taken on three points which can not but be vital to the future ready acceptance of this operation by the patient as well as by the profession.

My own experience, which, I may state, is both large and varied and dates from the time when I was taught prostatectomy by McGill of Leeds, in 1890, forces me to the conclusion that our suprapubic technic for prostatic enucleation is faulty in three directions, and these form the three points, I venture to suggest, should be carefully discussed and pronounced on by the surgical section of this association. I submit that our present technic tends (1) to the destruction of the vesical orificial ring; (2) to the wholesale destruction of

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the prostatic urethra with its afferent seminal ducts; (3) to the rough manipulation of the membranous urethra.

1. I submit that, no matter how the operation of removal is carried out, whether from above or below, the original vesical orifice must be left intact and covered with its own mucous membrane. I assert that, in a certain proportion of cases, a neglect of this simple axiom will inevitably lead the patient with a narrowed or warped vesical orifice due to cicatricial contraction with its attendant miseries and perhaps dangers.

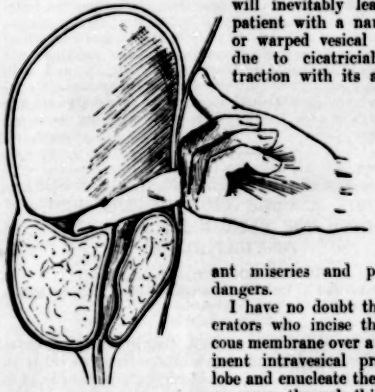


Fig. 2.—Finger pushed sideways through wall of prostatic urethra.

I have no doubt that operators who incise the mucous membrane over a prominent intravesical prostatic lobe and enucleate the gland *en masse* through this incision remove the entire vesical ring, ablate the prostatic urethra and pull out or destroy the ejaculatory ducts in a very large proportion of cases. They assert that this is not so, and point to the permanent urinary success of the procedure. But I submit that in successful cases the operator has been dealing with large intravesical projections, covered by a stretched and redundant mucous membrane, and that a big flap of this detached mucous membrane drops into the prostatic cavity and does duty as the prostatic urethral mucous membrane, and but little harm is done to the vesical orifice. In such cases—to use a golfing expression—"the turf is replaced."

Fig. 3. — Finger pushing between capsule and gland.

But there is a class of prostatic enlargements with urinary obstruction (probably forming 30 per cent. in the 50 to 60 decade) in which there is little or no intravesical projection, and, therfore, no redundant mucous mebrane at the base. There is, therefore, "no turf to replace." To merely incise the mucous membrane over the trigone in such a case and shell out the prostate as a whole, leaves a ragged orifice to the bladder. This contracts and ultimately forms a strictured vesical orifice.

The most striking example I can give is the following:

An old gentleman had the prostate removed suprapubically in the usual way by a surgeon of acknowledged worth and repute. Three months later the suprapubic wound closed and the patient at once found himself unable to micturate, nor could his physician pass a catheter further than the membranous urethra.

After prolonged retention and fever the suprapubic wound opened. I was then asked to see him, and on opening up the bladder I could not discover any urethral orifice at all, either with a powerful headlight or with the finger. Its position seemed to be taken by a dense knob of cicatricial tissue at the apex of the trigone, nor could I pass an instrument beyond the bulbous urethra.

Fig. 4.—Finger pushed still further.

Under these difficulties I obtained several sheeps' urethras, gradually dilated the stricture at the membranous urethra, ploughed a new passage toward the base of the bladder, pressed the steel bougie against the trigone and cut through the dense cicatrix until I had made a free, fresh vesical orifice. I then lined this new passage and orifice with strips of the sheep's urethra and so far the result has been successful in affording the patient fair urination and passage to a sound.

I may digress to say that I obtained the idea of a sheep's urethral graft from my brother, Clennell Fenwick, of Wanganui, N. Z., in 1896; also that five years ago I successfully inserted a goat's urethra into a big perineal gap of a boy's urethra. The wound healed by first intention and the patient is well to-day, so that the idea is practical. A bullock's urethra, however, will be found more easy to manipulate.

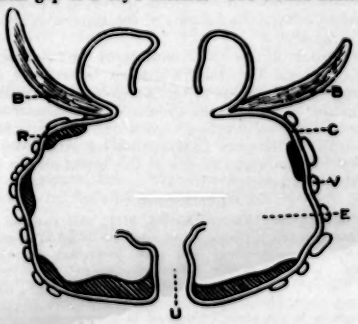


Fig. 5.—Prostatic capsule emptied of its contents with torn ends of prostatic urethra above and below. B, Bladder base.

I suggest that if a median or a large projecting lateral lobe be present that it be separately enucleated by an antero-posterior incision, and that the remainder of the

prostate be removed by a method which I have always used,[1] which consists in starting the separation from the prostatic urethra. Thus: The forefinger is inserted into the prostatic urethra up to the first joint (Fig. 1), the point of the finger is then bent and plunged sideways through the mucous membrane (Fig. 2), which in the soft elastic prostates gives readily before the pressure. At once the finger finds itself between the tough capsule of the prostate and the contained adenomatous masses (Fig. 3); traveling on without much opposition, the entire lobe is enucleated (Fig. 4), and generally stripped off the urethra. Especial care is taken with the floor of the urethra and with the opening of the ejaculatory ducts to leave the former intact and attached to its bed. Usually the adhesions between the lateral walls of the urethra and the lateral lobe are very dense, that part of the canal comes away with the lobe, but the floor is preserved. The lobe is now very gently detached from the triangular ligament, so as not to tear or bruise the membranous urethra, and, the lobe being free, it is pushed or pulled into the bladder; the opposite lobe is removed in a similar way. The finger finally smooths down the mucous membrane in the prostatic urethra, leaving the vesical ring quite clear and free from any projecting tags (Fig. 5). It heals (Fig. 6) by the structure being lined with part of the original prostatic urethra.

Fig. 6.—The same healed. Ends lining shrunken prostatic capsule and fusing at CC'.

I invariably work in very thick rubber gloves and never employ any instrument after incising the bladder, except in old-standing hemorrhage from prostatic ulcers. These ulcers I cut out with a knife under the control of the head lamp and caisson before I start enucleation.

The second and third vital points hinge on the technic I have just described.

2. The destruction of the ejaculatory ducts. Very many patients immediately and absolutely refuse the suprapubic operation because they can not be promised that they will retain sexual power. I am convinced of the enormous tonic value of the male sexual function in maintaining arterial health and even longevity, and I contend that ruthless destruction of the secretion of these glands will not only bring the operation into disrepute, but that it will greatly minimize the excellent future results obtainable by the procedure.

3. I think members of the profession little realize how readily the membranous urethra is damaged by the separation of the anterior face of the prostate from the face of the triangular ligament. It is astonishing how easily the mucous membrane is bruised and its muscle lacerated. As this is the future reinforcing sphincter of the bladder after prostatic enucleation, it should be very gently and cautiously handled.

1. This is a method of which I published a description in 1904.

To Reduce Obesity.—Von Basch advises graduated exercises and walking, short of exhaustion; restriction of carbohydrates and liquors; mineral waters containing Glauber's salts; and carbonated brine and vapor baths.—*Denver Medical Times.*

INDICATIONS FOR PROSTATECTOMY AND THE RESULTS OF THE OPERATION.*

ALEXANDER HUGH FERGUSON, M.B., M.D., C.M., F.T.M.S.
Professor of Clinical Surgery, Medical Department, University of Illinois.
CHICAGO.

The indications for removal of the prostate are based on the pathologic conditions present in the gland as manifested by symptoms and signs relative to obstruction to urination. The endeavor should be to learn the cause of the obstruction to the urinary outflow by studying the clinical evidence presented in each case. Inasmuch as an accurate opinion of the pathologic changes in the prostate cannot be formed without an antemortem or a postmortem section, we are forced to divide the indications for prostatectomy into two great classes: First, clinical; second, pathologic.

CLINICAL INDICATIONS.

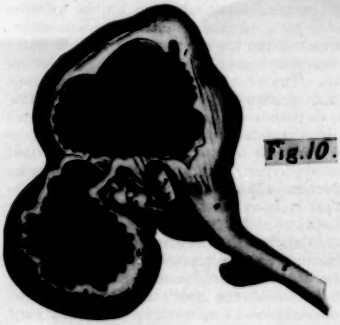
The clinical features of the disease may develop slowly or quickly, run an intermittent or a continuous, but usually a chronic course, with or without complications, until complete retention of urine occurs. The function of the bladder is interfered with first. It begins to empty itself more frequently, both day and night, and the act of urination becomes difficult and prolonged. The stream starts slowly, flows less forcibly, sometimes intermits, and ceases in an involuntary dribble. The more the patient hurries to complete the act, the more time it requires to perform it. The frequent and difficult urination is followed by a general vesical distress, which eventually becomes quite painful; and when cystitis ensues, an additional train of symptoms is added to make up what is designated "prostatism." These symptoms are present in nearly every case of prostatic obstruction. Frequent and painful urination may be the most prominent symptom in chronic nephritis, but the difficulty of urination and the dribbling of urine are absent. It is probably too dogmatic to say that "nocturnal frequent urination is almost pathognomonic of hypertrophy of the prostate." In order that the clinical indications for prostatectomy may be of any practical value, some classification of the cases is desirable. I select the following:

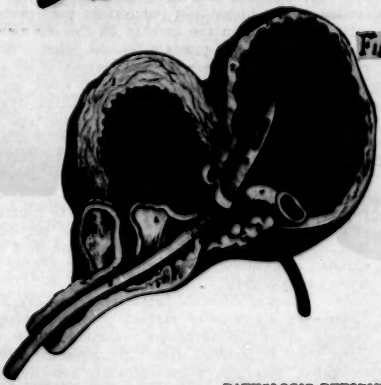
I. Cases Manifesting Genitourinary Functional Disturbances.—Cases with functional disturbances may last for months or years, and still not give sufficient cause to remove the offending organ. Besides frequent, difficult, and prolonged urination, other symptoms, such as sexual irritability, too frequent erections, premature orgasms, and unsatisfactory coitus may appear early, much to the discomfort and annoyance of the patient. A feeling of fulness in the bladder and perineum is present during the daytime and on awakening after the first sleep at night there is pain. With all his hurried calls to urinate, and slow and imperfect accomplishments, the man of 50 or 60 years, of continued health and prowess, conceited in his powers of enduring, resisting and conquering things generally, does not consult a surgeon until his better judgment, sorely tried, comes to the rescue; not until he finds that prescribed, recommended or suggested bladder and kidney medicines, rest at home and at hot springs, and restricted diet, are of but little avail. And, furthermore, that exposure, local and general excitement, and alcoholic stimulants increase his difficulties.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

PATHOLOGIC DEFORMITIES OF THE PROSTATE.

Fig. 1.—Lobes 1, 2 and 3 are equally enlarged and protrude into the bladder.
Fig. 2.—Crescentic meatus; 1, middle lobe; 2, ring; 3, bougie.
Fig. 3.—1. Cyst.
Fig. 4.—1. Lateral lobe.
Fig. 5.—1. Central lobe; 2 and 3, lateral lobe; 4, calcareous deposit.
Fig. 6.—1, 2 and 3, middle lobes; 4, lateral lobe.
Fig. 7.—1, 2, 3 and 4, from lateral lobe; 5, central lobe.
Fig. 8.—1, Central lobe; 2, lateral lobe.





PATHOLOGIC DEFORMITIES OF THE PROSTATE.

Fig. 9.—Bladder thickened; 5, sac; 6, stone in sac.
Fig. 11.—Stone in the bladder; 7, sac empties into urethra.
Fig. 13.—1. Bladder; 2, sac; 4, ureter; 5, bougie; 7, vesical orifice.
Fig. 10.—2. Opening between bladder and sac; 6, sac.
Fig. 12.—1. Bladder; 2 and 3, prostate gland; 4, ureter.
Fig. 14.—1. Bladder; 2, dilated ureter; 4, two calculi in prostatic urethra; 5, vas deferens.

In such a case no residual urine is found by the catheter, and no positive enlargement of the prostate can be detected by a rectal or bimanual examination, aided by a sound in the bladder; but the bladder is intolerant to the sound and the prostate is tender to manipulations. The urine is normal. The cystoscope may reveal a congestion of the internal vesical meatus and of the surrounding bladder mucosa, with some prominence in the latter. The diagnosis of a congestion of the prostate is now made. This is the first stage of prostatic hypertrophy. So long as there is no marked obstruction to the flow of urine, even though the gland is felt *per rectum*, to be prominent, prostatectomy is not yet indicated. In the absence of other causes of congestion, the fact that urination is prolonged is rather conclusive that the prostate is slightly hypertrophied. In this class of cases the genitourinary specialist finds a field for great usefulness, and by proper hygienic and local treatment prostatectomy may, in some individuals, be controverted.

The percentage of cases that remains rebellious to treatment and becomes worse must be high. It is self-evident that these patients should be operated on early before residual urine forms or infection occurs. It is unfortunate that many physicians do not associate early functional annoyances of the genitourinary organs, in men past middle life, with prostatic hypertrophy; for patients suffering from these symptoms either go on suffering or drift into the hands of public sinners in the profession, the advertising specialists. Finally, as a last resort, they come under the care of a competent surgeon at a time when they are defunctioned and on the verge of eternity through complications that at one time would have been avoidable, and through advanced pathology that should have been forestalled.

II. Cases with Partial Retention.—A man whose *bas fond* has formed so insidiously as not to interfere with his daily work or rest at night, other than a slight interference with urination, is likely to have acute retention of urine on exposure to cold, or as an after-dinner surprise. Relief is obtained spontaneously by antispasmodics, or by the use of a catheter, but almost ever afterward the catheter draws off residual urine after micturition. To avoid a return of his acute suffering from retention, he has to obey promptly Nature's call to empty the bladder, and avoid wine, exposure to cold and wet, as well as over-indulgence of any kind. A sagging of the bladder behind the prostate to hold residual urine, forms slowly, the process usually being manifested by an exaggeration of the symptoms and the signs already pointed out as characteristic of cases of the first class. There are two forms of partial retention, acute and chronic.

Acute: On determining the existence of prostatic dysuria and partial retention in any case, the dangers following permanent catheterization should be explained clearly to the patient. The habitual or daily use of the catheter must be denounced, whether in the hands of the nurse, patient, or physician. Even when the comparative comfort of the patient requires catheterization, cystitis is almost sure to develop in spite of all precautions. I impress on the patient the nature of his malady, explain that it is only a temporary relief that is afforded by the catheter, point out its dangers to life, and also the great results obtained by prostatectomy. Harrison, Lydston and others have shown that the expectation of life while using the catheter is only about four or five years.

Repeated hemorrhages into the bladder of a prostatic patient are sometimes profuse and dangerous. Instead of this sign being a contraindication for prostatectomy, as some operators aver, I have found that the sooner the gland is removed and the bleeding is checked, the safer it is for the patient. In this connection it must be remembered that erosions and ulcers due to catheter traumatisms are not prone to heal when the mucous membrane is chronically congested, as it is in all these cases. When the bladder becomes inflamed, whether the catheter has been used or not, the patient should be ordered to bed, preferably in a hospital, starved, purged and his bladder systematically irrigated for a week or more until the acute symptoms have subsided. Then the prostate should be removed before he resumes his work.

The cases that are difficult to treat successfully are those that are complicated with chronic cystitis. It is admitted by authorities on this subject that if the bladder is once chronically inflamed, it remains inflamed until the prostatic obstruction is removed. The sufferer should know the permanent damage that is sure to be done to the bladder, such as contraction, trabeculation, and formation of diverticula and stone. He should also be informed that ultimately ascending infection to his kidneys will prove fatal.

Chronic: In the chronic form of partial retention the quantity of residual urine gradually increases until eventually the bladder becomes distended to its utmost capacity, when some relief is often obtained by the urine forcing open the vesical meatus, causing an overflow in little intermittent streams or drop by drop.

Cases of the second class develop into cases of the third class in the manner just described.

III. Cases with Complete Retention.—In complete chronic retention the bladder is full all the time; every five, ten, or fifteen minutes during the day, involuntary urination occurs, while at night almost a constant dribble is noticed. Atony or contraction of the bladder is more or less extreme, depending on the length of time the retention has been complete, or on the duration of the cystitis.

The passing of a sound through the penis and the insertion of the finger into the rectum may reveal prostatic obstruction in the urethra on the one hand, and hypertrophy of the prostate on the other. Shall we recommend prostatectomy for members of this class? Yes. If, however, advanced age, feebleness, or disease of the kidneys or heart forbid an anesthetic, the operation is contraindicated; but neither the age of the patient nor the prostatic enlargement *per se* is a bar to prostatectomy. If the person is able to survive the operation, experience has taught that the kidneys will be benefited, the atony will subside wonderfully, and the bladder, oftener than not, will be able to contract and empty itself of its contents. Acute and partial retention usually repeats itself many times and then becomes chronic, and chronic retention may at any time become acute and complete.

IV. Cases of Absolute Incontinence and No Residual Urine.—In all cases of marked prostatic enlargement causing urinary disturbances, except in those of this class, there is residual urine; the prostatic urethra is elongated, enlarged, often tortuous, and its curve is increased. These conditions are detected by the catheter, the sound, and the cystoscope. In this class, however, there is not frequent urination, no dysuria, no residual urine, no elongation of the prostatic urethra, and no fulness or pain in the bladder or perineum.

On passing a catheter the bladder is found empty. The patient probably has been treated for months or years for paralysis. It is in this class of cases that the prostatic enlargement is in front and protrudes into the bladder anterior to the vesical orifice (Fig. 18). Since the sphincter cannot close the vesicle meatus, the urine no sooner enters the bladder than it flows away. If there be an overhanging enucleated development of prostatic tissue, as is here also represented, the vesical meatus may become blocked by it and retention follows. The enlargement may be felt above and behind the symphysis pubis.[1] Cystoscopy may show the site, shape, and probable size of the prostatic hypertrophy. In this class of cases there is no posterior, pathologic middle lobe, no bar, and no vesical meatal pouting or stricture. Prostatectomy offers the only relief. I have encountered two of these pathologic conditions and removed the prostates successfully. The bladder regained perfect control of the urine in both cases.

Prostatectomy is not always called for on account of the large size of the gland; for it may be very large and still offer no obstruction to micturition. Obstruction is the *sine qua non* for the operation. In one case of acute prostatis,[1] I found the rectum partially obstructed by the great size of the lateral lobes, and still the man had control of his urine and emptied his bladder completely. There was no abscess in the gland.

PATHOLOGIC INDICATIONS.

The prostatic urethra may be obstructed in any part of its course by hypertrophy of the prostate gland so as to prevent the free exit of urine from the bladder. When this takes place to the extent of disabling and endangering a man's life, there is a pathologic indication for prostatectomy.

1. Removal of the hypertrophied prostate is recommended because it interferes with the function of the vesical meatus while at rest and during activity. How? In many ways:

1. The hypertrophy raises the vesical meatus above the level of the base of the bladder like a nipple (Fig. 17), or like a cervix uteri, so high that the bladder can not empty itself.

2. The vesical meatus is held open by the hypertrophied gland, causing constant leakage of urine (Fig. 18).

3. Congestion or inflammation of the mucous membrane causes obstruction and retention.

4. The vesical meatus may be flattened from one side or both, and from in front or from behind, or both, forming a straight or crescentic slit, or, according to the direction and manner of prostatic pressure, the meatal opening may be left small, oval, star-shaped, Y-shaped, or even spiral (Figs. 1 to 18).

5. A pedunculated growth arising in front of, but oftener from behind, the urethra, may obstruct the meatus by a ball-valve-action, giving rise to a sudden stoppage of the flow of the urine while the man is micturating, simulating stone in the bladder. At other times the polypus-like growth causes complete retention (Figs. 2, 18, and 19).

6. A bar of tissue and mucous membrane occasionally becomes stretched across the vesical meatus between two enlargements of the lateral lobes and offers obstruction to the urinary flow (Fig. 20). These conditions, interfering with the neck of the bladder, functionally and anatomically, have no tendency to clear away spontaneously, and in order to prevent further distress and pathologic changes, the removal of the prostate is indicated both for comfort and to save life. It is not often that a bar alone exists.

II. The second pathologic indication for prostatectomy is when the hypertrophy obstructs the flow of urine from the bladder, in any part of the prostatic urethra, from the vesical meatus to the membranous urethra.

1. The entire enlarged gland may surround the prostatic urethra and obstruct the flow of urine through it by circumferential pressure.

2. Both lateral lobes may compress the urethra in one or more places.

3. One lateral lobe or a nodule in it not infrequently obstructs the urethra. The size of the prostatic growth, and the degree of obstruction, bear no exact relationship to each other; for a small nodule may more thoroughly obstruct the urethra than a large one.

III. A third indication is found in a condition of contraction and cicatrization of the prostate from chronic inflammation. In the case of one patient operated on by me, the prostatic infection was first a mixed one; then mostly streptococcic, and, finally, only the colon bacillus was found. While chronic inflammation is occasionally a pathologic indication for prostatectomy, it does not belong to the senile prostatic class.

IV. The fourth pathologic indication for prostatectomy is the deleterious effect prostatic obstruction has on the bladder, kidneys, and rectum.

For the purpose of demonstrating the gross pathologic conditions found in the cadaver in cases of senile prostatic hypertrophy, fifty years ago, Mr. Maclise,[2] F.R.C.S., London, published a book in which one chapter is devoted to this subject. He states that he made the drawings himself from prostates and bladders examined in the hospitals and museums of London, Paris, and elsewhere. They are the best I have seen. Some of his drawings are reproduced in Figures 1 to 14, which need no description other than the labels attached thereto. The term "middle lobe" is used to indicate a lobulated mass of hypertrophied prostatic tissue situated in the middle at the neck of the bladder.

LITERATURE BEARING ON COMPLICATIONS, SEQUELÆ AND MORTALITY.

Hugh H. Young[3] reports 50 cases of perineal prostatectomy without any deaths. The ages of the patients ranged between 80 plus and 50 plus, two being over 80 years old, and thirteen being between 50 and 60. One man, aged 72, was in excellent condition two weeks after the operation, when, after an enema, he died very suddenly. The autopsy showed pulmonary embolism. A second death occurred one month after the operation in a patient aged 82. He did well for two weeks after the operation, but then gradually grew weaker and died apparently as much from old age as anything else. Of the 50 patients, 22 claimed to have normal sexual powers; 10 patients reported the sexual powers impaired before the operation. There were 4 cases of rectal fistula and 1 case of slight incontinence of urine. Epididymitis occurred in two weeks in 2 cases, in three weeks in 3 cases, and after two months in 1 case. The epididymis was involved on one side only. The bladder was infected in every case.

George E. Whiteside[4] reports a critical study of 238

1. Occurring in the practice of Dr. A. H. Elliott of Chicago.

2. "Surgical Anatomy," 1856.
3. THE JOURNAL A. M. A., Feb. 4, 1905.
4. Am. Jour. Urology, August, 1905.

cases, collected from many sources. He says that perineal prostatectomy is considered by the majority of surgeons as the best operation in most cases. Immediate death results from sepsis, shock, cardiac disease, pneumonia, and uremia. Remote death occurs from cancer, cachexia, pyelonephritis, embolism, and may be the result of secondary operations done to overcome defects left by the first. Absolutely good results occur in about 30 per cent. of all patients operated on. Sequelæ are numerous and troublesome. They include rectal fistula, urinary sinus abscess, stricture at the bladder neck, incontinence, frequent micturition, residual urine, epididymitis, sexual impotence, cystitis, vesical calculus, and urinary tuberculosis. Carcinoma, sarcoma, and syphilis have all proved stumbling blocks for the diagnostician.

J. L. Thomas[5] reports 15 prostatectomies, 13 suprapubic and 2 perineal, with 2 deaths, one the result of the operation, occurring 48 hours afterward, and the other due to pneumonia, occurring about 9 days after operation. The ages of his patients ranged from 56 to 77. The two who died were operated on by the suprapubic method. No complications or sequelæ are reported.

J. E. Moore[6] in a critical article on the subject of prostatectomy, points out its inconveniences and dangers. He thinks it is too grave an operation to be resorted to as a routine treatment, and that it is applicable only in properly selected cases. The ever-present danger of uremia in kidney disease or sepsis, the various complications, such as injury to important blood vessels, peritoneum and nerves, hemorrhage, which, however, is not a very serious danger, the possibility of permanent damage to the urethra and of extensive injury to the bladder in case of the suprapubic operation, and in the perineal operation of injury to the rectum, must all be taken into consideration. Moreover, under the present technic the seminal ducts are not preserved, and this is a grave complication. Other unfortunate sequelæ are epididymitis, incontinence or dribbling of urine, and the possibility of perineal fistula. He says that it is a mistake to fill the large space in the perineum with gauze because it delays union and leads to complications.

J. W. Thompson Walker[7] refers to 73 cases operated on by Freyer up to December, 1903, many of which were complicated by cystitis, either chronic or in recurrent attacks. Four patients who had stone died. In the case of two of these the stone had been removed some time previous to the operation on the prostate, and in the remaining two the stone was removed at the time of the prostatectomy. In none of these cases could the fatal result be attributed directly to the condition of the bladder. In three of the fatal cases renal disease was noted or suspected. One patient died of uremia, and a dilated renal pelvis and ureters were found. In the case of another patient, whose death was ascribed to bronchitis, a few granular casts and albumin had been found in the urine. Three patients died of pneumonia, and it was noted that there was probably advanced renal disease. In none of the fatal cases was death ascribed to failure of the circulation. One patient whose death was charged to uremia was very stout and suffered from emphysema and bronchitis. One patient died of bronchitis.

The same author[8] also reports a series of 111 cases, with 20 deaths, 13 of which occurred in patients who were obviously at the point of death when operated on. The long-standing cystitis disappeared or was greatly lessened in more than half the cases, and distinct amelioration of the most troublesome symptoms occurred in over 80 per cent. of the cases, with a return to conditions not very far removed from normal in 46 per cent. of those operated on.

Fig. 15.—Three lobes enlarged, obstructing the vesical orifice, bladder sacculated, contracted and containing calculi; A, median lobe; B, lateral lobes; C, prostatic urethra; D, bladder; E, calculi embedded in pouches.

P. J. Freyer[9] reports 60 cases of total enucleation of the prostate, with 5 deaths, one from chronic disease of the liver, probably malignant; two from uremia; one from bronchitis, and one from unknown cause. The fatal cases were in patients aged 59, 67, 73, 70, and 69, respectively.

Alexander B. Johnson,[9] New York, reports 4 cases operated on by the perineal route, and consequent abdominal incision having been used to afford access to the prevesical space. There was neither cystitis nor residual urine in two cases three years and two years after operation, respectively. The urine of the third case, after one and a half years, contained a faint mucous cloud, with slight residual urine. In the fourth case, five months after operation, urination was said to be normal in frequency, with a clear urine.

Archibald MacLaren[10] reports 13 prostatectomies, with only one death. The patient was suffering from a suppuration of both testicles and an acute cystitis. Postmortem showed a double pyelonephritis. One man died nine months after the operation from cancer of the

5. Brit. Med. Jour., May 20, 1905.
6. Annals of Surgery, March, 1904.
7. Practitioner, August, 1904.
8. Practitioner, July, 1905.
9. Med. News, Aug. 1, 1903.
10. St. Paul Med. Jour., August, 1904.

pelvis. He had full control of his urine till his death. One man had total incontinence. In his case the prostatic urethra was removed with a hard inflamed prostate. He is now wearing a urinal and his condition is better than it was before the operation. The remaining patients are alive and well, passing urine not oftener than once at night and five times during the day. The oldest patient was 82, the youngest 46; the average age was 64. In five of these cases there were stones in the bladder as a result of the prostatic obstruction. In three there has been secondary stone formation after the operation, necessitating a secondary removal. One of the patients has had considerable incontinence from a urethral fistula.

George M. Phillips published a small handbook in November, 1903, giving the experience of 40 American surgeons with prostatectomy. Ten of these report 199 perineal prostatectomies, with 21 deaths, and the following after-results or complications, 9; recto-urethral fistula, 9; secondary hemorrhages, 2; urethral fistula, 6; dribbling of urine, 7; stricture, 1; calculus, 1; epididymitis, 5.

H. H. Martin[11] reports ten cases operated on by the perineal method of Bryson, with two deaths, one due to septic absorption, chiefly from the suprapubic wound six days after the operation, and the other ten days after the operation from an acute nephritis. One case was complicated by vesical calculus. One case demonstrated the difficulty which may be encountered in enucleating the prostate when a Bottini operation has been done previously. Most of the cases were desperate, ranging in age from 62 to 74. Two patients were obliged to use the catheter subsequently, on account of residual urine, but both patients had had complete retention before the operation, and now can pass some urine. They are not troubled with frequent urination, and are perfectly comfortable. The remaining five patients were relieved entirely, and do not require the further use of the catheter.

Fig. 16.—A, bladder; B, mouth of diverticulum; C, diverticulum cut open; D, site of prostate (removed).

F. S. Watson[12] says that following the Bottini operation 30.4 per cent. of the patients are cured, and in 84.4 per cent. good results are obtained. Following perineal operations 60 per cent. are cured, and in 88 per cent. good results are obtained. Following suprapubic operations 66 per cent. are cured, and in 90 per cent. good results are obtained. In a series of 267 Bottini operations there were 11 per cent. of failures, and incontinence of urine resulted in seven cases, or 2.6 per cent. In 59 other cases operated on by the Bottini method and reported by Willy Meyer, epididymitis occurred in six and orchitis occurred in two cases. In one each of these cases suppuration ensued, and in another case there was gangrene of the testicle. Perineal abscess and urinary infiltration occurred in four cases, owing to the membranous urethra having been injured. In another case the rectum was injured and a recto-urethral fistula resulted. Altogether, there were more or less serious complications in 22 per cent. of the cases. In 245 cases of perineal operation, there were two in which the peritoneum was opened; seven in which recto-urethral fistula resulted, and nine in which incontinence followed; 7.3 per cent. of accidents. A small proportion of incontinence and persistent fistula ensued following the suprapubic operation, this altogether amounted to about 6 per cent.

Hugh Cabot[13] reports 53 operations performed at the Massachusetts General Hospital from January, 1892, to July, 1893. The average age of the patients was 63 years, with 9 deaths, a mortality of 17 per cent. Eight Bottini operations, average age 61 years; no deaths. Thirty-four cases of castration, average age 66.7 years; five deaths, 14.7 per cent. mortality. Of 25 patients since heard from, operated on by the cutting method, eleven are well; six are relieved, and eight are the same or worse. Of the perineal operations, 57 per cent. of the patients were well or relieved, and 43 per cent. were worse. Of the complete operation, 83 per cent. of the patients were well or relieved, and 17 per cent. were worse. The complete operations were largely done either by the combined method or by one of the modifications of the perineal method.

Arthur L. Chute[13] reports a case occurring in a man, 72 years of age, showing the condition of the bladder and surrounding structures in a fatal case, death taking place 23 days after a suprapubic enucleation.

Escat[14] presented the results of 410 cases of perineal prostatectomy; death followed in 47 cases, 1.3 per cent.; a urethro-perineal fistula or rectal fistula in 8 per cent., and permanent incontinence of urine in 3 per cent. He favors perineal prostatectomy because the mortality of the suprapubic operation is higher, 10 to 15 per cent. He also considers the partial removal more dangerous than the complete removal. Proust[14] collected 813 cases of perineal prostatectomy, with a mortality of 7.13 per cent. Albarran[14] lost two cases out of 66 (3 per cent.) operated on by the perineal method. Of 34 cases of chronic complete retention before operation, followed for a year thereafter, 32 were completely successful; in two cases there was residual urine amounting to a few ounces, which he thinks was due to the existence of a sclerosis of the vesical walls consecutive to a chronic cystitis. Of 23 operations for incomplete retention, there were 12 complete successes and three failures. These latter were chronic cases of hypertrophic prostatis. He says that the results of complete transvesical prostatectomy are remarkable; in almost all the published cases the pa-

11. Med. Record, Oct. 8, 1904.
12. Boston Med. and Surg. Jour., April 28, 1904.
13. Boston Med. and Surg. Jour., Aug. 3, 1905.
14. Ann. des Mal. des Org., G. U., 1905, p. 1634.

tients urinate easily and completely, being able to empty the bladder spontaneously. Furthermore, there are no permanent fistulæ, no cicatricial contractions of the vesical neck, no injuries of the rectum, no loss of sexual power. The greater mortality, however, constitutes a barrier that must be considered. In 12 cases of suprapubic cystotomy for various purposes, in men over 60, he has not had any mortality. He ascribed his low mortality to his great care in determining the contraindications to operation. Of 44 cases operated on by the perineal method, more than a year before, and 15 cases operated on from three to four and a half years earlier, there were 55 complete successes, 4 partial successes, and 3 complete failures. Nicholich[14] performed 12 perineal prostatectomies with two deaths; 12 Freyer's operations with one death.

Freyer[15] reports 195 cases of suprapubic prostatectomy. In the first 110 cases his mortality was 10 per cent.; in the second 85 cases the mortality was 5.8 per cent. Nine of the patients were over 80 years old, and one 79. All recovered; nine are alive, with good urinary control; one died from cancer of the prostate. In a paper read before the British Medical Association, July, 1904, Freyer related his experience with 110 cases of suprapubic prostatectomy, the patients ranging in age from 53 to 84 years. In three cases the enlarged prostate was cancerous; two patients made operative recoveries; the third died three weeks after operation. Of the remaining 107 cases, 10 patients died from various causes; 2 from mania after the wounds were practically healed; 1 from pneumonia seven days after operation; 2 from exhaustion a few hours later, and 2 from septic infection. Complete success resulted in 97 cases, the patients regaining completely the power of voiding and retaining the urine, without fistulæ or incontinence.

Moynihan[16] reports 12 cases of suprapubic prostatectomy with one death. Baithing[17] reports 10 cases, and Stoker[17] reports three cases without a fatality. Goodfellow[18] reports 73 cases of perineal prostatectomies, with 2 deaths, one after seven hours, the other from sepsis after eleven days. There have been no permanent fistulæ. In several cases partial incontinence of urine has lasted two to four months in men over 70 years of age.

Freyer[19] reports 31 cases of extirpation through a suprapubic cystotomy, with four deaths; 22 recovered from the urinary troubles. Albarran[20] reports 42 perineal prostatectomies, with only one death. There were 35 complete cures, two distinct improvements, and three patients were not followed. Murphy[21] reports 34 cases, with one death. Young[22] reports 12 cases without a mortality. Goodfellow[23] reports 26 cases with one death. MacGowan[24] reports 28 cases with four deaths.

Delfis[25] reports 30 cases with only two deaths, the perineal route having been used. Syms[26] reports 20 cases operated on by perineal enucleation without a death. Fuller[26] lost only one out of 18 perineal prostatectomies. Freudenberg[27] reports 318 cases of the Bottini operation collected from the literature, alleging success in 77.75 per cent., failure in 13.75 per cent., and a mortality of 8.5 per cent. Horwitz[28] reports on 161 cases of various operations for the relief of prostatic hypertrophy, including 28 of vasectomy, 31 double castration with two deaths, 11 suprapubic prostatectomy with 3 deaths, 7 perineal prostatectomies with 3 deaths, 33 Bottini without mortality.

15. London Lancet, 1905, p. 1268.
16. Ann. of Surgery, January, 1904.
17. Brit. Med. Jour., Jan. 30, 1904.
18. The Journal A. M. A., July 16, 1904.
19. Brit. Med. Jour., April 18, 1903.
20. Ann. des Mal. G. U., December, 1902.
21. Chicago Med. Recorder, August, 1903.
22. Am. Med., 1903, p. 813.
23. Before the Cal. Acad. of Med., April 29, 1902.
24. N. Y. Med. Jour., June 27, 1903.
25. Ann. des Mal. G. U., October, 1902.
26. The Journal A. M. A., Oct. 25, 1902.
27. Centrbl. f. krankh. d. Harn. u. Sex.-Org., 1901, p. 571.

MORTALITY AFTER PROSTATECTOMY.

M. Tuffier[29] believes that the suprapubic operation is easier and quicker to perform than the perineal. When the gland is very small and the abdomen very fat, he selects the perineal route. He points out that the mortality is lower by the perineal operation, and quotes from Proust, Watson, Horwitz, Leque, Hartman, Pauchet, Rafin, Young and Albarran, to the effect that there were 2,227 cases, the average mortality being 6.23 per cent., out of the total number of cases operated on by a large number of different operators. He says that renal insufficiency is the cause of death in about the same number of cases in both operations (35 per cent. perineal and 33 per cent. suprapubic). Shock is given as the cause of death in 17.8 per cent. operated on by the perineal method, and 22 per cent. in those operated on by the suprapubic method.

The general mortality is about 4 per cent. in perineal prostatectomy. Re-establishment of spontaneous urination and relief of vesical infection are the rule. The genital loss is habitual. The age of the patient and the lesions are not contraindications. The relative integrity of renal activity is necessary. Patients with grave organic deficiency, such as diabetes and albuminuria, succumb to pretended shock. The two methods have their advantages and disadvantages.

Mortality after prostatectomy is the subject of a paper by Drs. Tenney and Chase,[30] in which they accept as possibly due to the operation every death reported as occurring within six weeks. From their table we find that 2,342 patients were operated on through the perineum, and 667 suprapubically. It will be seen that the average mortality by the perineal route is 7.9 plus. The average mortality by the suprapubic operation is 13.2 plus, nearly twice the mortality of the operation through the perineum.

In my own cases I had no deaths in the first series of 21. Following that I lost three cases, one from renal insufficiency in 48 hours. This was considered a very unfavorable case for any operation. Another patient died in twelve hours from an overdose of morphin; and a third succumbed on the ninth day, an unfavorable case because of old age and emaciation. This makes my mortality between 3 and 4 per cent. in 103 cases, and does not include five deaths following prostatectomy, three from carcinoma and two from acute tuberculosis.

There have been no permanent fistula even in those with pus-furnishing bladders, which were inflamed, trabeculated and with stones, pouched, or diverticulated (Figs. 15 and 16). The natural tendency of the perineum is to close spontaneously, but so long as pus emits, a fistula is likely to persist or to recur. I had two of these cases. Injury to the rectum during operation is more of a blunder than an accident, and secondary rectal fistulæ are caused most frequently by rough treatment from the eighth to the twelfth day, when granulation is

28. Phila. Med. Jour., June 8, 1901.
29. "Treatment de l'Hypertrophie de la Prostate." Report au XV Congrès International de Medicine, 1905.
30. The Journal A. M. A., May 12, 1906.

profuse. This latter has occurred in the case of two of my patients in whom the after-treatment was not carried out by myself. Three patients were wearing urinals on account of partial incontinence, which was more acceptable to them and their relatives than death. One of these, 70 years of age, accepted the operation only when life became intolerable from pain due to cystitis, etc. Considerable sloughing at the seat of operation from the skin inward occurred. There was one man, with impotence following, who avers he proved his vigor

Fig. 17.—Prostatic ring, with nipple-like vesical orifice; A, vesical orifice, contracted fibrous-like and protruding into the bladder; B, lateral lobes enlarged but not causing obstruction; C, bougie in prostatic urethra; D, bladder; E, ureters.

Fig. 19.—Central lobe pathologic (tumor-like). A, central lobe; B, lateral lobe; C, prostatic urethra; D, bladder; E, ureters; F, vas deferens; G, vesicula seminalis.

Fig. 18.—Hypertrophy of anterior portion of the lateral lobes; A, bladder; B, anterior portion of the lateral lobes enlarged projecting into bladder, causing obstruction; C, bougie in prostatic urethra which is straighter than normal.

Fig. 20.—Lateral section. A, central lobe forming a transverse bar; B, lateral lobes; C, prostatic urethra; D, bladder; E, ureters.

two nights before operation. One case of stricture secondary to operation was cured by perineal section. Five patients had epididymitis. One had unilateral (left) intranephritic and extranephritic abscess developing three weeks after operation. I cured him by incision and drainage. Stone in the bladder was present in six cases.

OPERATION.

Before closing, I wish to say a few words regarding the operation through the perineum. It is not always necessary to pass a grooved staff through the penis, a sound will do, and I have performed the operation without any guide *per vias naturales*. The preferable position in which to hold the patient is that known as the extralithotomy position. While I prefer to open the membranous urethra and proceed down to the sinus pocularis at the point in the prostatic urethra where the ejaculatory ducts open (this sinus, although small in the normal, is not infrequently enlarged in those suffering from prostatic hypertrophy), still I have frequently removed the prostate without any injury whatever to the membranous urethra. After splitting the capsule laterally it is best to enucleate the lateral lobes first, carefully dissecting them away from the prostatic urethra without injuring the ejaculatory ducts. This procedure is more difficult in some cases than in others, depending on the fibrous attachments between the prostate and its urethra. The finger is pressed into the prostatic urethra and acts as a guide while these attachments are cut or taken away piece by piece by biting or cutting forceps. So long as the fibrous partition which protects the ejaculatory ducts is not torn through nor injured, these ducts are not destroyed. When the ejaculatory ducts are pushed to one or both sides of the prostate and the hypertrophy raises into the bladder like a plateau, then I use the depressor and insert it into the bladder through the perineum to aid the finger in accomplishing the enucleation.

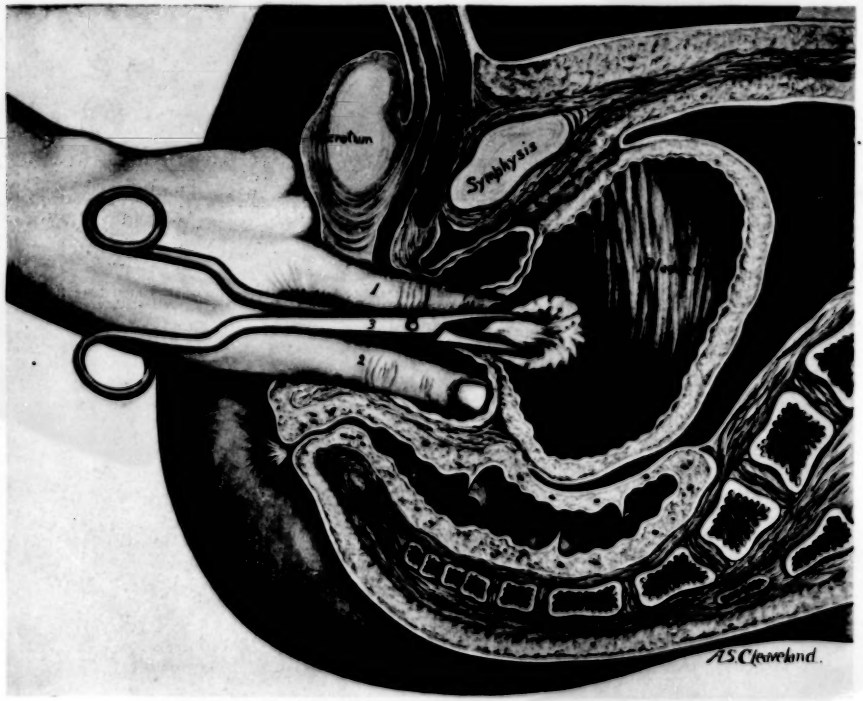


Fig. 21.—1. Middle finger in the bladder; 2, index finger in space from which prostate gland was removed; 3, prostatic forceps grasping the middle lobe.

It may be necessary to follow prostatic nodules in more than one direction behind the bladder, and in their removal care should be taken not to injure the vesical sphincter. It is not wise to tear them out forcibly with the finger, but rather remove these nodules, piece by piece, with the biting forceps. In a certain percentage of cases the so-called pathologic middle lobe (and what else can we call it when it is in the middle), whether projecting into the bladder anteriorly or posteriorly, is followed and removed as described above when it has broad attachments to the lateral lobes (Figure 22). On the other hand, it is frequently pedunculated and

the hypertrophied prostatic tissue is found within the bladder like a polypus. The pedicle may be without any prostatic tissue in it whatever, and it would be utterly impossible to follow it by its original route on account of its being shut off by fibrous tissue. Then it must be removed by way of the internal vesical orifice. The finger is passed into the bladder, the polypoid prostatic tissue is detected and seized by the forceps as represented in Figure 21. In cases in which it is not necessary to preserve the procreative power the ejaculatory ducts are deliberately severed and this expedites and facilitates the performance of the operation.

I admit that it is sometimes impossible to save the upper portion of the prostatic urethra, especially when the prostatic enlargement completely encircles it. Still, it is not necessary to remove the entire prostatic urethra as is done by the suprapubic route. It is possible to remove the entire gland in one piece without injury to the bladder, ejaculatory ducts, or prostatic urethra in suitable cases. Large forceps materially aid in seizing and holding large masses of tissue. When the prostate is a bar of tissue at the neck of the bladder, or is a stricture at the internal vesical meatus, with or without a protrusion, these conditions are usually noticed early in the operation and treated by dilation or removal by the cutting forceps.

To refer again to the ejaculatory ducts, if the person treated is young and vigorous and it is very desirable for him to retain his procreative functions, then another expedient may be resorted to which aids as a guide to save the ducts. The inguinal region is opened, the vas deferens is sought and opened at the internal ring, and a fine probe is passed through the vas deferens to the sinus pocularis in the prostatic urethra. The best material that I have found for catheterizing the vas deferens and ejaculatory ducts from without inward, is very fine aluminum bronze wire, 36 in. long and doubled on itself. The doubled end will readily pass through the seminal duct and can be felt in the prostatic urethra. Some of these cases have an oblique inguinal hernia, and this affords an opportunity and also an additional excuse to perform this catheterization in suitable cases.

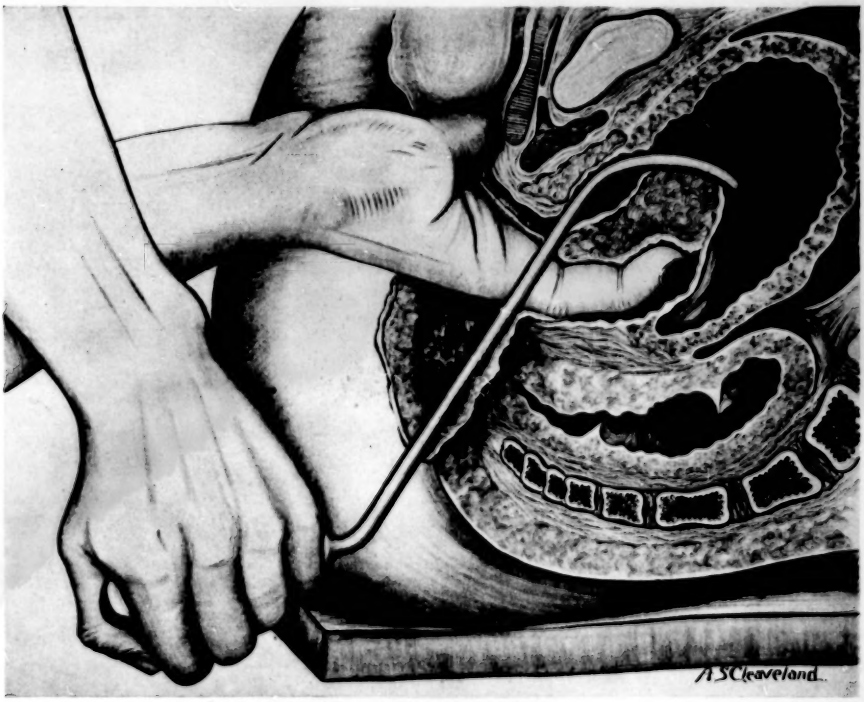


Fig. 22.—Extravesical enucleation of the pathologic middle lobe.

Should it be impossible to catheterize the ejaculatory ducts from without inward then a solution of methylene blue can be forced through into the prostatic urethra which stains the mucous membrane of the ejaculatory ducts and prostatic urethra. This, however, does not act as a guide to prevent their injury, but it indicates when they are injured because the stained tissue is noticed when it is removed, and then examined with the microscope. I make it a practice to stain the mucous membrane of the prostatic urethra and bladder in all

cases subjected to prostatectomy. Care must be exercised to wash the methylene blue out of the bladder before beginning to operate and in its place leave a solution of boric acid sufficient to distend the bladder to its utmost.

DRAINAGE.

Nearly all my patients were drained through the perineum. I am convinced that the technic is improved and convalescence is shortened by drainage through the penis by an ordinary retention catheter, No. 23, American. The membranous and prostatic portion of the urethra are closed by a few stitches of No. 1 chromic catgut, and the deep wound is drained by gauze alone at the most dependent part, and all the

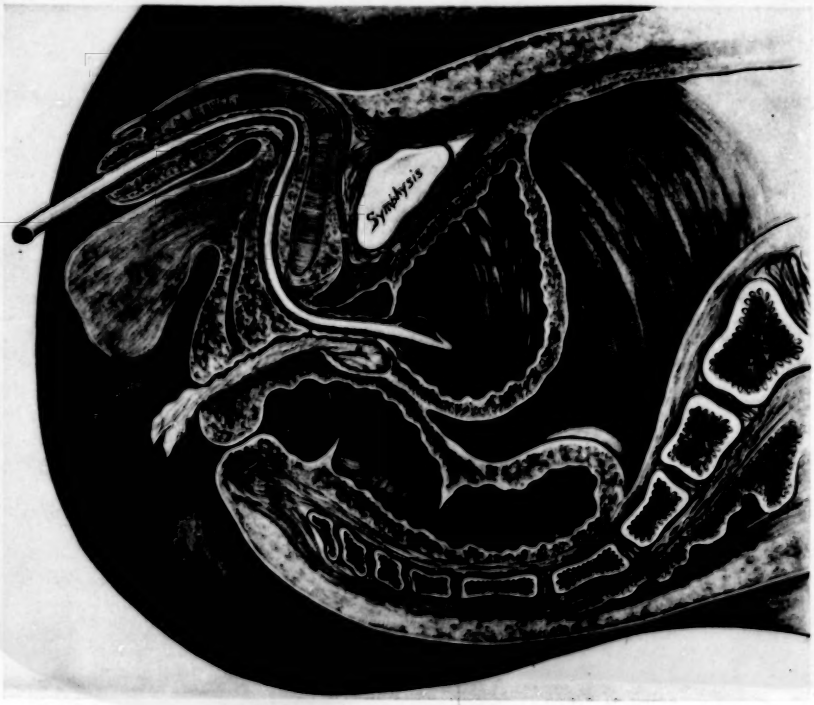


Fig. 23.—1, Drainage in place; 2, gauze packing.

structures of the perineum are coapted by an interrupted suture of silkworm gut. The gauze drainage in the perineum is removed on the third day and replaced; in a couple of days this gauze is withdrawn, but the retention catheter is left in the bladder and external urinary tract for a week. During this time should temperature develop or vesical tenesmus arise, it is well to wash out the bladder three or four times a day with a mild antiseptic solution. I have obtained perfect results by the above technic.

After the catheter is removed, retention of urine is likely to ensue from spasmodic contraction of the neck of the bladder. This is rather a good sign, for it indicates that the sphincter of that viscus has not been injured and the retention is easily rectified by the use of the catheter. I have seen men become greatly discouraged and even melancholic after prostatectomy, especially when temporary control of the urine is partly or wholly absent. But just as soon as the bladder again performs its function properly, they become bright, cheerful and hopeful. After prostatectomy the patient should be kept under supervision for about three months, because repair is not complete until about that time. Should the patient not be bougied occasionally, at least once a week while repair is going on, stricture at the neck of the bladder or at the junction of the membranous and prostatic urethra is likely to occur. I have found it necessary to perform a secondary perineal section in two cases for stricture following prostatectomy; one at the neck of the bladder and the other at the junction of the membranous and prostatic urethra. For the latter I blame the perineal drainage alone.

It is remarkable that atony of the bladder subsides completely in the vast majority of cases, but some bladders never become capable of emptying themselves after prostatectomy without considerable delay and difficulty. There is also a tendency to cystitis.

It must be remembered that patients with prostatic hypertrophy are usually more or less pathologic specimens of humanity in their entirety, and that prostatectomy, although a great boon to them, is not an elixir of life.

DISCUSSION.

Dr. Hugh H. Young, Baltimore, did not agree with Dr. Ferguson as regards technic, although he said that technic is rather a minor affair, as most surgeons do better work with the methods they are used to employing than with other methods. The operation as carried out by numerous English surgeons is outrageous, he said, destroying the urethra, ejaculatory ducts, etc. Dr. Ferguson's operation has two or three grave defects. First, that median incision. It does not give as great a field of exposure as is gotten with the inverted V or the curved incision. Also by means of a different form of tractor it is possible to do more than that. Dr. Young thinks that Dr. Ferguson is correct in saying that the perineal route is the better of the two, having a lower mortality and a better convalescence.

Dr. Young is now preparing a report of 150 cases of prostatectomy. Among these there were 145 cases of benign prostate. Of these, 24 patients were between 60 and 70; 16 between 75 and 79; 4 between 80 and 84; and 1 patient was 87 years of age. Among these 150 cases there were seven deaths. One patient had a vesical ulcer and a severe stricture and died on the ninth day of vesical hemorrhage. The second man was uremic. He was put on prophylactic treatment, but died at the end of fifteen days. The autopsy showed a double pyonephrosis. The third man was very old. He died on the twentieth day of hypostatic congestion of the lung. The fourth was a man 72 years of age, delirious, uremic. He was put on prophylactic treatment and drained with a catheter. It was thought that operation might help him. Perineal drainage was instituted and it helped for a while. He lived for twenty-one days. He undoubtedly had a double pyonephrosis. The fifth patient was in excellent shape and he ought to have gotten well. A day or two before he left the hospital he became constipated. He was given an enema and died. The autopsy showed a pulmonary thrombosis. The sixth patient was 81 years of age. He was in very bad shape. The bladder was distended up over the umbilicus with 2.000 c.c. of residual urine. He died five weeks after the operation. Another man, 87 years of age, died of pneumonia contracted twenty-four days after the operation. In the last year Dr. Young had fifty cases with only one death. The autopsy showed pyonephrosis. Therefore, he offers these cases as showing conclusively that perineal prostatectomy is practically a benign operation, and any patient in anything like fair shape ought to get well, except that pulmonary thrombosis must always be borne in mind.

Dr. John B. Deaver, Philadelphia, said that he had taught anatomy for many years, and he has since seen many prostates in the living as well as in the dead subject, but he has yet to see a middle lobe. Normally the prostate consists of two lateral lobes and the supposed middle lobe is only an elongation of the right or left lateral lobe.

As to the operation. Both Dr. Young and Dr. Ferguson said that the infrapubic operation is vastly superior to the suprapubic. Dr. Deaver said he had taken out many prostates by the latter method in three and a half minutes and the patients got well. The mortality is about equal. The destruction of the neck of the bladder is by far greater in the infrapubic method than in the suprapubic. Dr. Young talks about leaving the prostatic urethra. With all due respects to both Dr. Ferguson and Dr. Young, Dr. Deaver did not believe that they do what they think they do. He has not succeeded in leaving the prostatic urethra. He removes it in every instance and his patients recover and remain well. The perineal operation has its place for the removal of small, hard, fibrous prostates; but the large, juicy, adenomatous prostates should be enucleated from above. Those are the cases in which the gland can be enucleated without any instruments except the fingers.

So far as destruction of the neck of the bladder is concerned, nothing is done to the vesical orifice in suprapubic prostatectomy. What is done by the perineal route? What is the result? Incontinence, injury to the rectum, perineal fistulas. He has yet to see any of these accidents occur in a suprapubic prostatectomy, and he has patients walking around who are 80 years of age. Men recover the urinary function in a short time after the suprapubic operation.

Dr. J. E. Moore, Minneapolis, said there are two primary objects in operating on the prostate promptly in these early cases. One object is to relieve the obstruction. Dr. Moore thought that the profession has arrived at a stage in prostatic surgery when it is wise to educate the medical man, the general practitioner, just as it did in the matter of appendicitis. Surgeons ought to dwell a little on the early symptoms, as pointed out by Dr. Ferguson. Often, particularly in the rural districts, the first symptom that calls attention to the fact that a middle-aged man has something wrong with his prostate is the sudden suppression of urine, and many times the treatment prescribed then is what gives him his infected bladder and kidneys, giving rise to one of those septic cases from which surgeons get their mortality. The treatment at the beginning is very essential. If the general practitioner will learn that when a man gives a history of dribbling of urine or frequent urination, suppression or full bladder, that that man has a prostate that needs looking after. He should think of consulting a surgeon in the matter and get at the bottom of the trouble. He will do his patient much good by refraining from infecting his bladder by improper treatment.

The next danger point is the catheter. The catheter is infinitely more dangerous to the prostatic than is the operation. All surgeons agree on that. The technic is still a bone of contention. Dr. Moore said he was one of the first in this country to advocate the perineal route earnestly, and that still is his operation of choice; but it does seem to him that it is wise to go at most of these things in a level-headed way. A man can not do his best if he makes the case fit the operation rather than to make the operation fit the case. Since he has learned to do the suprapubic operation, he has felt it his duty several times to operate by that route, where the prostate was very large and projected into the bladder. So that now, while the perineal operation is the operation of choice with him, he also does the other operation when it is necessary, and he finds it more frequently indicated every day. If the general practitioner can be educated up to the dangers of obstruction, surgeons will get these cases earlier and have a comparatively low mortality because the mortality comes from neglected or infected cases. A certain number of these patients are impotent after operation, but Dr. Moore is sure that it is better to have these men in the fifth to seventh decade of life without procreative powers and live than to have them in the cemetery.

Dr. A. H. Ferguson, Chicago, said that he had no deaths in the first twenty-one cases. Then he had three deaths, one from renal insufficiency, within forty-eight hours. This he would now look on as an unfavorable case for operation. Another patient died in twelve hours from an overdose of morphin given during his absence from the city by a careless nurse. The third patient died practically from old age and from being too emaciated to be operated on. There are no permanent fistulas in any of his cases, although there were some temporary fistulas extending over a period of from three months to a year and a half. Injury to the rectum during operation, he said, is more of a blunder than an accident. There were two cases of secondary fistulas through the rectum, the result of bad postoperative treatment not carried out by him. This list does not include two deaths where he was consulted in the operating room and finally took part in finishing the operation. Nor does it include five other deaths, three from carcinoma and two from acute tuberculosis.

Dr. Ferguson said he was amazed at the stand Dr. Deaver took in this matter, because he can prove to Dr. Deaver the correctness of every statement he made. In a certain per cent. of the cases he can save the ejaculatory ducts and remove the prostate through the perineum. It is a marvelous thing, he said, that obstruction of the bladder takes place after a

perineal prostatectomy after removing the mucous membrane, but it is an extraordinary thing to open the bladder, pass in the hand and rip out everything and then expect nothing wrong to happen. He saw one case operated on suprapubically, and there was absolute stricture at the neck of the bladder, admitting only a filiform bougie.

The mortality is the point on which the whole thing should hinge. These old people should not be treated for the sake of usefulness to the surgeon, but because he wants to make them bless him as long as they live. Dr. Ferguson said he would rather have 5 per cent. of perineal fistulas than have 5 per cent. of his patients in the grave. Tuffier collected 2,227 cases with only 6 per cent. of mortality by the perineal route. Tenney and Chase of Boston collected 2,342 cases operated on by the perineal route and 667 operated on by the suprapubic route, with a mortality of 7 per cent. on the one hand and 13.2 per cent. on the other.

GANGOSA.

O. J. MINK, M.D. AND N. T. McLEAN, M.D.
Assistant Surgeons, U. S. Army.
U. S. NAVAL STATION, GUAM.

DEFINITION.—Gangosa, a Spanish word meaning muffled voice, is the name employed by the Spaniards in the Ladrone and Caroline Islands to describe a disease characterized by a destructive ulceration, usually beginning on the soft palate, pillars or uvula, and extending by continuity to the hard palate and nasal cavity, larynx, and even to the face. Active ulceration is followed after a variable period by cicatrization or chronic ulceration. Mutilation always results. Constitutional symptoms are either slight or absent.
SYNONYMS.—*Rhinopharyngitis mutilans* (Leys). *Ogo* (Chamorro).

HISTORY AND GEOGRAPHY.

There is absolute proof that gangosa has existed in the Island of Guam for at least 150 years, and probably much longer. In 1828 the Spanish Royal Commission sent to investigate conditions in the Ladrone Islands reported gangosa as being prevalent and recommended that these cases and cases of leprosy and large ulcerations be isolated on one of the smaller islands of the group. This is the earliest official recognition of the existence of the disease and the name gangosa. From these sources it is evident that the disease showed the same characteristics as at the present time. The known distribution of gangosa is somewhat indefinite. It exists throughout the Ladrone and Caroline islands. The case from Panama, recently reported by Fordyce and confirmed by Arnold, is undoubtedly true gangosa.[1]

Surgeon J. F. Leys,[2] United States Navy, has carefully studied the bibliography and mentions reports of rhinopharyngeal ulcerations in Fiji, British Guiana, Jamaica, Italy, Dominica and Nevis. Inasmuch as Dr. Leys, who is familiar with the disease as it exists in Guam, has recently discussed the cases found in Dominica and Nevis with Dr. J. Numa Rat, the recorder of these cases, the disease undoubtedly exists in the West Indies as well as in Polynesia.

ETIOLOGY.

General Prevalence.—During the past year 125 cases have been examined. Many of these were brought under compulsion by the authorities. It is certain that the work of the past year did not include all the cases, as many not yet apprehended are known to exist in various parts of the island. A conservative estimate places the total number between 200 and 250. The population of the island being about 11,000, the ratio is 18 to 22 per 1,000. As the natives of the various parts of the island are intimately associated by religious, marital and commercial relations, no topographic distinctions can be made.

Season.—The limited number of cases seen during the period of invasion makes it impossible to give any definite statement concerning the effect of season.

Age.—In a series of 80 cases the ages at the time of invasion were as follows:

First decade	2
Second decade	38
Third decade	23
Fourth decade	13
Fifth decade	2
Sixth decade	2

The youngest ages at invasion were 3 and 9 years; the oldest were 54 and 59 years. From these figures it appears that the majority of the cases start during the second and third decade.

Sex.—In the above series of 80 cases, 49 were in females and 31 in males.

Immunity.—No cases have been observed or recorded in whites. Cases in persons of mixed white and native blood are infrequent. The great majority of all cases appear in the pure-blood native. The absolute and relative immunity in the white and mixed races respectively may be explained by the superior hygienic and dietetic surroundings of these races.

Heredity.—There is no evidence showing that heredity plays any part in the transmission of the disease.

Food.—The native theory and that held by the Spaniards gives food a prominent place in the causation of the disease. They believe that such foods as decomposed or very salty fish, especially if eaten raw, uncooked taro and native pepper are the direct causes of the disease. This theory seems improbable. The eating of tainted fish is not more frequent than in any other fish-eating community, and when eating the usual symptoms of ptomain poisoning occur. Cases of gangosa rarely give a history of such poisoning. The eating of very salty fish, raw taro and native pepper is not sufficiently frequent to explain the large number of cases. Furthermore, cases are seen in natives eating the same food as the whites.

A Manifestation of Syphilis.—The disease has been considered a late manifestation of syphilis. During the past year we have not seen syphilis of any type among the native population and do not believe it exists. Our observations agree with those of Leys,[3] who states:

> It (gangosa) appears in healthy and well-developed persons of all ages, with no signs of hereditary syphilis in their own persons or in their brothers and sisters; and with no signs of syphilis in their parents. . . . Acquired syphilis is a common disease in most races over nearly the whole world. It is an extremely rare disease here, and neither primary nor secondary syphilis has been seen in a native during the past year, among thousands of persons treated for other diseases, including several prostitutes. This disease is common here, and rare or unknown where syphilis is common. Dr. Daniels, who was in Fiji for years, states that there was no syphilis in Fiji at a time when the lesions in this disease were common. The appearance of the primary lesion of this disease in otherwise healthy children of healthy parents, at 3, 4 and 9 years of age, excludes acquired syphilis.

A Sequel of Yaws.—Gangosa has been described as a sequel of yaws. Only one of our cases gave a history of this disease. While gangosa is limited to a few localities, yaws is a common disease in most tropical countries. We see no reason to consider it as an etiologic factor.

Specific Infecting Agent.—Our observations lead us to believe that there is a specific infecting agent, the nature of which is as yet undetermined. It is believed

1. Fordyce: Jour. Cut. Dis., January, 1906.
2. Leys: Jour. Trop. Med., London, Feb. 15, 1906.
3. Leys: Report of the Surgeon-General, U. S. Navy, 1905, p. 93.

that in the transmission of the disease flies are an important factor. The lesions of gangosa are so exposed that flies are attracted in great numbers, and, while feeding on the exudations, their legs, wings and bodies are contaminated. They in turn may infect the patient directly or indirectly through the food. The use in common by all members of the family of such articles as towels, clothing, pipes, cigars and betel-nut, with absence of dietetic hygiene, renders direct infection probable. The individual vital resistance is lowered by overcrowding, 15 to 20 persons, as a rule, sleeping in a small, unventilated hut. The resistance being lowered by such environment, the disease is easily transferred.

Inoculation.—No experiments have been made or cases seen which would indicate that infection by inoculation occurs.

MORBID ANATOMY.

As the disease is not fatal, autopsy is only possible when death results from intercurrent diseases. We have had but one case for autopsy:

Autopsy.—A male of 18 years. Clinical diagnosis; native epidemic asthma. Well developed and nourished, small muscular build. Nose and upper lip were entirely destroyed and replaced by triangular opening leading to the pharynx. Bony parts forming roof of mouth absent. Cuticle between eyes and inferior maxilla was a mass of superficial scar tissue. Tongue was normal. Tonsils and pillars were replaced by scar tissue. Larynx was normal. Eyes were normal. Brain was not examined. Heart was hypertrophied. Pericardium was normal. Pleura firm, adhesions right apex and left base and apex.

Lungs: Right upper lobe firmly adherent, middle and lower lobes dark in color; bronchioles contain thin purulent fluid. Left lung firmly adherent at apex and base, lower lobe dark in color, bronchioles contained thin purulent fluid. Left pneumothorax. Liver: Large, pale and mottled in appearance (a condition frequently seen at autopsy here). Gall bladder filled with dark bile. Kidneys normal. Stomach distended but normal. Intestines normal, contained large numbers of ascaris, hook and whip worms. Pancreas in consistency increased.

Cause of death: Native epidemic asthma. Sections of gangotic area were sent to the United States for examination.

PATHOLOGIC HISTOLOGY.

Fordyce states that the lesion was a granuloma, the nature of which could not be determined by the methods employed. It could be differentiated from others of this class, like blastomycosis, actinomycosis, rhinoscleroma and lepra, by the absence of their specific microörganisms; from mycosis fungoides by the character of the infiltrate and the absence of fragmentation. The histologic picture could be readily mistaken for tuberculosis, as the giant cells were numerous, with nuclei arranged peripherally. Many independent foci containing three or four cells were encountered deep in the corium.

SYMPTOMS.

Onset.—Only three cases have been observed from the earliest stages of the disease. The majority of patients present themselves for treatment only after mutilation is marked. In the three cases above mentioned the initial symptoms led to a diagnosis of tonsillitis, pharyngitis and laryngitis of mild degree. The patients were between the ages of 12 and 15 years and were in good physical condition. Prostration was slight or absent. All showed a slight rise of temperature and complained of soreness in the posterior nares and pharynx, with stiffness of the muscles of deglutition. In one case a typical acute coryza was present. Inspection at this time showed mild congestion of tonsils, pillars, soft palate and uvula. During the first week the general condition was practically unchanged.

Local Symptoms.—The throat symptoms became localized, and on the third day a patch of yellowish-gray membrane was observed on the soft palate in the first case, the uvula in the second and the right pillar in the third case. The membrane was elevated, thick and extremely tenacious. On removal the denuded surfaces bled freely. Within twenty-four hours of the appearance of the membrane the typical ulceration was established. On the area covered by the membrane a number of small depressions appeared. The ridges between the depressions and the membrane were rapidly absorbed. The ulcer, now about one-half inch in diameter, had a punched-out appearance, with undermined edges and a deep, uneven floor, covered with a yellowish-white, very offensive discharge. It was surrounded by a zone of inflammation about one-fourth inch in width. The depth of the ulcer rapidly increased until, in the case of the uvula and soft palate, the tissues were perforated by the seventh day. These cases are still under observation.

Course of the Disease.—After the first week no marked changes occur in the character of the ulcer. It progresses steadily, the rapidity varying with the individual case, destroying the bony and soft parts with equal ease. This active stage may continue indefinitely or may become arrested at any period. The average duration in those cases of our series, which later became quiescent, was about two years. The active stage in those cases varied from one to seven years in duration.

In seven cases, which have never been quiescent, the disease has progressed slowly, but steadily, the shortest having continued for ten and the longest for thirty-five years. At any time during quiescence the disease may again become active. This activity may continue indefinitely or pass into a second stage of quiescence. These alternate periods of activity or quiescence may occur repeatedly. When inactive the zone of inflammation is replaced by a more or less perfectly scarred area, from which an abundant and very offensive discharge pours. At no time during either stage is the patient's general health materially affected.

Fulminating Gangosa.—This type occurs in children under 5 years of age, and all cases seen have been in gangotic families. In some instances two or three children in the same family have been attacked. The sudden onset, extreme prostration, extensive membrane, marked cervical adenitis and rapidly developing toxemia and dyspnea give a picture closely resembling diphtheria. Surgeon C. P. Bagg, United States Navy, states that cultures from the throats were negative for Klebs-Loeffler bacilli. Death occurs from toxemia rather than from dyspnea. The great majority of these cases prove fatal within forty-eight hours, but if the patient survives this period the typical mutilation rapidly develops and the case follows the usual course.

COMPLICATIONS AND SEQUELÆ.

All complications result from the direct extension of the disease and vary in severity with the extent of ulceration. The principal parts which may be involved are the nose, hard palate and superior maxillæ, larynx, eyes, face and teeth.

Nose.—The extensive destruction of the deeper parts may totally destroy this organ. The septum and turbinates are early attacked. The supporting structure is destroyed, the external soft parts sink and later may be

TABLE OF CASES.

No.	General History. Age and Sex.	Family History.	History of Disease. (Years.) Duration.	Active.	Quiescent.	Present Condition. Tonsils and Pillars.	Uvula and Soft Palate.	Hard Palate.	Larynx.	Nose.	Eyes.	General Condition.
1	65 F.	Good. Only case	33	20	10	Destroyed	Destroyed	Perforated	Unaffected	Flattened and septum perforated.	Unaffected	Excellent.
2	63 F.	Good. Only case	2	1½	½	Unaffected	Very slightly affected.	Unaffected	Unaffected	Flattened and septum perforated.	Unaffected	Excellent.
3	46 F.	Good. Only case	13	13		Slightly affected	Unaffected	Unaffected	Unaffected	Destroyed	Unaffected	Excellent. Deaf 18 years.
4	45 M.	Good. Only case	8	8		Destroyed	Destroyed	Badly necrosed	Badly ulcerated	Destroyed	Destroyed	Excellent. Voice hoarse and totally blind.
5	36 M.	Good. Only case	10	¼	9¾	Slightly affected	Destroyed	Perforated	Badly ulcerated.	Septum destroyed	Unaffected	Excellent. Voice hoarse.
6	42 M.	Good. Only case	32	20	20	Destroyed	Destroyed	Badly scarred, perforated.	Unaffected	Flattened	Unaffected	Excellent.
7	47 M.	Bad. Other cases	29	2	27	Destroyed	Destroyed	Badly scarred, perforated.	Unaffected	Partially destroyed	Unaffected	General muscular paralysis.
8	33 M.	Bad. Father, tbc.; mother, gangosa.	4	2	2	Slightly affected	Uv. destroyed. S. P. v. s. affected.	Perforated	Badly ulcerated	Flattened	Unaffected	Excellent. Voice absent.
9	22 F.	Only case. Father, tbc.	5	2	3	Destroyed	Destroyed	Perforated	Unaffected	Flattened	Unaffected	Excellent.
10	42 M.	One other case. Sister, tbc.	27	1	26	Destroyed	Destroyed	Perforated	Unaffected	Flattened	Unaffected	Fair. Cervical adenitis.
11	67 F.	Bad. Other cases	17	1	16	Unaffected	Unaffected	Unaffected	Unaffected	Destroyed	Unaffected	Fair. Large ulcer L. F. A.
12	19 M.	Only case. Father, tbc.	1/12	1/12		Unaffected	Very active ulceration.	Slight active ulceration.	Unaffected	Unaffected	Unaffected	Excellent.
13	28 F.	Bad. Mother, tbc.; father, gangosa.	7	5	2	Slightly affected	Unaffected	Unaffected	Slight ulceration	Flattened	Unaffected	Excellent. Voice hoarse.
14	62 M.	Good. Only case.	23	3	20	R. destroyed	Right side destroyed.	Right side perforated.	Voc. cords scarred	Unaffected	Unaffected	Excellent. Voice absent.
15	40 M.	Good. Only case.	12	1	11	Destroyed	Destroyed	Perforated	Slight ulceration	Destroyed	Right eye destroyed	Fair. Healed lupus scars.
16	19 F.	Unobtainable	8	7	1	Destroyed	Uv. destroyed S. P. v. s. affected	Unaffected	Unaffected	Unaffected	Left eye destroyed	A leper.
17	18 F.	Good. Only case	9	1½	7½	Destroyed	Destroyed	Perforated	Slight ulceration	Septum destroyed	Active destruction	Poor. Lupus neck, face and chest.
18	27 F.	Good. Only case	24	10	24	Destroyed	Destroyed	Perforated	Slight ulceration	Destroyed	Active destruction	Excellent.
19	24 F.	Good. Only case	14	7	7	Unaffected	Partially destroyed.	Unaffected	Unaffected	Unaffected	Unaffected	Excellent.
20	46 F.	Bad. All affected	35	35		Destroyed	Destroyed	Extensive necrosis.	Badly ulcerated	Totally destroyed	L. destroyed. R. ulcerated.	Good, except asthma. Voice hoarse.
21	22 M.	Bad. All affected	5	5		Destroyed	Destroyed	Perforated	Badly ulcerated	Totally destroyed	Unaffected	Excellent. Voice hoarse.
22	24 F.	Only case. Father, tbc.	13	13		Destroyed	S. P. unaffected Uv. destroyed.	Unaffected	Badly ulcerated	Posterior ulceration	Unaffected	Excellent.
23	17 F.	Uncle, gangosa	7	4	3	Badly scarred	Uv. destroyed. S. P. perforated.	Unaffected	Unaffected	Destroyed	Unaffected	Excellent.
24	21 F.	Good. Only case.	11	11		Destroyed	Destroyed	Extensive necrosis.	Badly ulcerated	Entirely destroyed	Lower lids destroyed.	Poor. Large ulcers L. F. A.
25	30 M.	Bad. All affected	14	2	12	Destroyed	Partially destroyed	Extensive necrosis.	Unaffected	Flattened	R. lower lid destroyed.	Good.
26	24 M.	Bad. All affected	6	6		Destroyed	Destroyed	Extensive necrosis.	Slight ulceration	Destroyed	Unaffected	Good. Voice hoarse.
27	21 M.	Only case. Cousin, tbc.	2	2		Destroyed	Uv. destroyed. S. P. perforated.	Unaffected	Badly ulcerated	Unaffected	Unaffected	Excellent. Voice almost gone.
28	56 M.	Fair. Cousin, gangosa	40	2	38	Destroyed	Uv. destroyed S. P. perforated.	Perforated	Badly ulcerated	Partially destroyed	Unaffected	Excellent. Voice absent. Deaf 26 years.
29	30 F.	Only case. Father and brother, lepers.	10	4	6	Destroyed	Slightly affected	Perforated	Slight ulceration	Flattened	Unaffected	Fair. A leper.
30	37 F.	Mother, gangosa	7	2	5	Destroyed	Partially destroyed.	Perforated	Slight ulceration	Partially destroyed	Unaffected	Fair. A leper.
31	62 M.	Good. Only case	30	2	28	Destroyed	Destroyed	Perforated	Slight ulceration	Partially destroyed	Unaffected	Excellent.
32	44 F.	Mother, tbc.; father, gangosa.	28	1	27	Destroyed	Destroyed	Perforated	Unaffected	Partially destroyed	Unaffected	Excellent.
33	30 F.	Good. Only case	19	⅓	9⅔	L. T. destroyed	Slightly ulcerated.	Perforated	Unaffected	Partially destroyed	Unaffected	Excellent.
34	49 F.	Good. Only case	7	7		Destroyed	Slight ulcerations.	Unaffected	Unaffected	Very slight ulceration	Unaffected	Excellent.
35	46 F.	Good. Only case	21	21		Destroyed	Destroyed	Perforated	Slight ulceration	Septum de-troyed	Unaffected	Excellent. Voice hoarse.
36	28 F.	Good. Only case	22	1	21	Destroyed	Destroyed	Perforated	Slight ulceration	Unaffected	Unaffected	Excellent. Voice hoarse.
37	15 F.	Good. Only case	6	6		Unaffected	Uv. slightly ulc.	Unaffected	Slight ulceration	Unaffected	Unaffected	Excellent. Voice hoarse.
38	62 F.	Good. Only case	12	1	11	Unaffected	Unaffected	Unaffected	Unaffected	Partially destroyed	Unaffected	Excellent.
39	21 F.	Poor. Father, tbc.; mother, gangosa.	9	2	7	Slightly affected	Slightly affected	Perforated	Unaffected	Flattened and septum destroyed.	Unaffected	Good. Scars of old ulcer, large joints, chest and neck.
40	27 F.	Good. Only case	24	14	10	Destroyed	Destroyed	Perforated	Unaffected	Flattened	Unaffected	Fair. Many scars of old ulcers.
41	41 F.	Fair. Mother, tbc	12	2	10	Destroyed	Destroyed	Perforated	Unaffected	Destroyed	L. destroyed. R. lids destroyed.	Poor. A leper.

TABLE OF CASES—Continued.

No.	General History. Age and Sex.	Family History.	History of Disease. (Years.) Duration.	Active.	Quiescent.	Present Condition. Tonsils and Pillars.	Uvula and Soft Palate.	Hard Palate.	Pharynx.	Nose.	Eyes.	General Condition.
42	18 F.	Good. Only case. Mother a leper.	2	1	1	Destroyed.	Destroyed.	Perforated.	Slight ulceration.	Flattened.	R. lower lid ulcerated.	Good. Voice hoarse.
43	15 F.	Good. Only case.	4	2	2	Destroyed.	Destroyed.	Scarred.	Unaffected.	Destroyed.	R. lower lid ulcerated.	Excellent.
44	12 F.	Good. Only case.	2	1	1	Destroyed.	Destroyed.	Perforated.	Unaffected.	Destroyed.	L. lower lid ulcerated.	Excellent.
45	40 M.	Good. Only case.	24	9	15	Destroyed.	Destroyed.	Destroyed.	Unaffected.	Destroyed.	L. destroyed. R. unaffected.	Excellent. Feeds through nasal opening.
46	21 M.	Good. Only case.	6	1	5	Unaffected.	Unaffected.	Unaffected.	Unaffected.	Destroyed.	Unaffected.	Excellent.
47	29 M.	Good. Only case.	9	4	5	Destroyed.	Uvula destroyed. S. P. unaffected.	Perforated.	Unaffected.	Destroyed.	Unaffected.	Excellent.
48	48 M.	Good. Only case.	22	1	21	Destroyed.	Destroyed.	Perforated.	Unaffected.	Flattened.	Unaffected.	Excellent.
49	20 F.	Good. Only case.	6	1	5	Destroyed.	Destroyed.	Perforated.	Unaffected.	Destroyed.	Destroyed.	Excellent.
50	14 F.	Good. Only case.	4	1	3	Unaffected.	Uvula unaffected. S. P. perforated.	Perforated.	Unaffected.	Unaffected.	Unaffected.	Excellent.
51	36 M.	Good. Only case.	22	13	9	Scarred.	Destroyed.	Perforated.	Unaffected.	Destroyed.	Destroyed.	Poor. A leper.
52	11 F.	Bad. Four other cases.	4	3	1	Destroyed.	Destroyed.	Perforated.	Unaffected.	Active ulceration.	Unaffected.	Excellent.
53	25 F.	Bad. Four other cases.	8	1	7	Destroyed.	Uvula unaffected. S. P. perforated.	Perforated.	Slight ulceration.	Destroyed.	Unaffected.	Excellent. Voice hoarse.
54	14 M.	Bad. Three other cases.	1	1	.....	Destroyed.	Destroyed.	Perforated.	Unaffected.	Unaffected.	Unaffected.	Excellent.
55	18 F.	Fair. Only case. Two cases of leprosy.	1	1	.....	Destroyed.	Uvula unaffected. S. P. scarred.	Scarred.	Slight ulceration.	Flattened.	R. lower lid ulcerated.	Good.
56	20 F.	Good. Only case.	1	1	.....	Destroyed.	Destroyed.	Scarred.	Unaffected.	Filled with adenoid growth.	Unaffected.	Fair. Mass of adenoid tissue protrudes from nose to right cheek.
57	20 F.	Good. Only case.	12	2	10	Destroyed.	Destroyed.	Perforated.	Unaffected.	Flattened.	Both l. lids ulcerated.	Good.
58	40 F.	Bad. Two other cases.	10	2	8	Destroyed.	Destroyed.	L. side destroyed. R. side scarred.	Slight ulceration.	Unaffected.	Unaffected.	Excellent. Voice hoarse.
59	22 M.	Bad. Mother gangosa.	4	2	2	Destroyed.	Scarred.	Perforated.	Unaffected.	Flattened.	Unaffected.	Excellent.
60	40 F.	Good. Only case.	1	1	.....	Destroyed.	Destroyed.	Active ulceration.	Slight ulceration.	Unaffected.	Unaffected.	Excellent. Voice hoarse. Very active.
61	13 M.	Bad. Mother dead of gangosa.	2	1	1	Destroyed.	Active ulceration.	Active ulceration.	Unaffected.	Flattened. Ulcer on right side.	Unaffected.	Good.
62	20 M.	Good. Only case.	2	1	1	Destroyed.	Destroyed.	Destroyed.	Unaffected.	Sunken. Taroe-lobed anterior opening.	Unaffected.	Good. Large ulcer on left leg.
63	12 M.	Bad. Uncle, gangosa.	2	1	1	Destroyed.	Destroyed.	Perforated and scarred.	Slight ulceration.	Sunken. Two-lobed.	Unaffected.	Good. Voice hoarse.
64	21 M.	Good. Only case.	1	1	.....	Unaffected.	Unaffected.	Unaffected.	Unaffected.	Septum destroyed.	Unaffected.	Good. All internal nasal structure destroyed. Nose inflamed.
65	37 M.	Good. Only case.	12	1	11	Destroyed.	Destroyed.	Scarred.	Unaffected.	Partially destroyed.	Unaffected.	Excellent.
66	26 M.	Good. Only case.	1	1	.....	Scarred.	Scarred.	Scarred.	Unaffected.	Unaffected.	Unaffected.	Excellent.
67	26 F.	Bad. Brother, gangosa.	1	1	.....	Unaffected.	Destroyed.	Destroyed.	Slight ulceration.	Unaffected.	Unaffected.	Excellent. Voice hoarse.
68	18 M.	Bad. Sister, gangosa.	1	1	.....	Destroyed.	Destroyed.	Perforated.	Unaffected.	Flattened and softened.	Unaffected.	Excellent.
69	29 M.	Good. Only case.	5	1	4	Destroyed.	Destroyed.	Destroyed.	Slight ulceration.	Destroyed.	Unaffected.	Excellent. Voice hoarse.
70	47 M.	Bad. Two other cases.	27	1	26	Destroyed.	Destroyed.	Almost destroyed.	Unaffected.	Destroyed.	Lower lids destroyed.	Good. Upper lip absent. Face badly scarred.
71	49 F.	Good. Only case.	25	1	24	Destroyed.	Destroyed.	Perforated.	Slight ulceration.	Flattened and sunken.	Unaffected.	Good. Voice hoarse.
72	24 F.	Good. Only case.	1	1	.....	Destroyed.	Scarred.	Scarred.	Slight ulceration.	Scarred, flattened and drawn to the right.	Unaffected.	Good. Mouth badly scarred. Voice hoarse.
73	27 M.	Good. Only case.	3	1	2	Destroyed.	Right side of S. P. destroyed	Perforated.	Unaffected.	Flattened; l. nostril partially destroyed.	Unaffected.	Good.
74	47 F.	Good. Only case.	16	1	15	Destroyed.	Destroyed.	Scarred and perforated.	Unaffected.	Sunken, tip turned upward.	L. lower lid destroyed.	Good. Face badly scarred.
75	18 M.	Good. Only case.	6	1	5	Destroyed.	Destroyed.	Scarred.	Unaffected.	Destroyed.	L. lower lid destroyed.	A leper. Face badly scarred.
76	13 F.	Bad. Three other cases.	1	1	.....	Pillars scarred. L. T. perf.	Scarred.	Scarred.	Extensive ulceration.	Unaffected.	Unaffected.	Good. Very hoarse voice.
77	12 F.	Only case. Mother, the.	2/12	2/12	.....	Unaffected.	Destroyed.	Perforated.	Extensive ulceration.	Unaffected.	Unaffected.	Fair. Leper. Very hoarse voice.
78	20 F.	Good. Only case.	1	1	.....	Scarred.	Scarred.	Scarred.	Unaffected.	Destroyed. Active ulceration	Unaffected.	A leper. Face badly scarred.
79	44 F.	Good. Only case.	6	¼	5¾	Destroyed.	Destroyed.	Destroyed.	Unaffected.	Destroyed.	Both lids destroyed. L. staphyloma.	A leper. Face badly scarred.
80	41 F.	Good. Only case.	1	1	.....	Scarred.	Scarred and contracted.	Slightly scarred.	Unaffected.	Scarred externally.	Unaffected.	Good. Face badly scarred.
81	19 M.	Good. Only case.	2/12	1/12	1/12	Unaffected.	S. P. perforated to post-nares.	Unaffected.	Unaffected.	Unaffected.	Unaffected.	Excellent. (New case.)

absorbed, the organ being replaced by an opening. The sense of smell is destroyed early in the course of the disease.

Hard Palate and Superior Maxillæ.—The hard palate may be perforated or entirely destroyed. The central portions of the superior alveolar arches are frequently destroyed. This causes loss and deformity of the upper teeth. This deformity produces the typical "cleft palate voice" from which the disease takes its name.

Larynx.—In 81 cases the larynx was involved in 33. Involvement varies from slight ulceration to total destruction, and as a result the voice is husky or absent.

Face.—Ulceration extends peripherally from the oral and nasal openings or from the common opening when the upper lip is destroyed.

Eyes.—These become involved when facial ulceration destroys the lids. The eyes were involved in 21 cases. The sequence in destruction is conjunctivitis, corneal opacity, staphylomata and finally blindness.

Tongue.—The tongue and muscles of deglutition are unaffected.

Hearing.—Hearing was affected in only 2 cases. No sequelæ have been observed.

Fig. 1.—Case 52. Extensive involvement with no external mutilation.

Fig. 2.—Case 62. Flattened nose.

Fig. 3.—Case 35. Notice extensive scarring of upper lip.

DIAGNOSIS.

To those who have ever seen a case of gangosa, diagnosis offers no difficulty. The primary rapid ulceration, consequent mutilation and subsequent chronic ulceration produce a picture seen during the active stage. During the quiescent stage the ulceration is replaced by scar tissue.

Differential Diagnosis.—Gangosa is differentiated from (1) leprosy, by the sudden onset with immediate localization, absence of fatal termination and absence of *B. lepræ*. (2) Lupus of the mucous membranes, by the sudden onset, local appearance of the throat symptoms, absence of tubercle bacilli and absence of tuberculosis elsewhere. (3) Syphilis, by the absence of history and symptoms and the failure of specific treatment. The disease bears no clinical resemblance to blastomycosis, actinomycosis, rhinoscleroma or mycosis fungoides.

Fulminating gangosa is diagnosed from diphtheria by the absence of Klebs Loeffler bacilli and by the typical mutilation in those cases which survive.

PROGNOSIS.

Except in the fulminating type, the disease *per se* is never fatal. The mutilations and complications are permanent and cause corresponding disability. Intercurrent diseases follow a typical course and are not severer than in those unaffected with gangosa.

PROPHYLAXIS.

The contagiousness of the disease has been recognized by the Spaniards in Guam for almost a century. They established a colony for the segregation of these cases, which was discontinued at the time of the American occupation. There is good evidence showing that this abandonment of segregation has increased the prevalence of the disease in Guam. In view of this fact, the governor of Guam, on April 9, 1906, issued the following order:

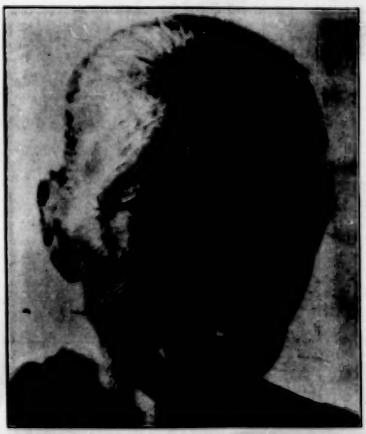


Fig. 4.—Case 38. Old scarring with labial destruction.

EXECUTIVE GENERAL ORDER NO. 111.

In view of the existence in this island of an infectious and contagious disease known as *Gangosa*, it is of paramount neces-

sity, in the interest of humanity and for the protection of society, to adopt proper measures to arrest the spread of that loathsome and dangerous malady. Less rigorous methods being either futile or of doubtful efficacy, it is hereby ordered and decreed that:

1. All persons within the Island of Guam who, on examination before a board consisting of all the medical officers of the Naval Station of the island ordered by the governor, are found to be suffering from *Gangosa*, shall, on the unanimous recommendation of said board, be segregated in the same manner and under the same conditions, rules and regulations as are now provided by General Order No. 43, in the case of lepers.

2. The place of segregation shall be a tract of land in the locality of Ypao, district of Agna, to be known as the Ypao Colony, having an area of about six (6) hectares, the boundaries of which shall be constructed of convenient and suitable material and bear the sign Ypao Colony.

3. This order shall take effect on the eighteenth day of April, 1906. T. M. Potts, U. S. N., *Governor*.

Fig. 5.—Case 45. Extensive skin involvement has destroyed left eye.

Fig. 6.—Case 42. Notice beginning of total destruction of nose.

Fig. 7.—Case 20. Very severe scarring: left eye destroyed.

Fig. 8.—Case 75. Notice co-existence of leprosy and gangosa.

In the fulminating type rigid quarantine should be established, the unaffected members of the family being removed and kept under observation.

TREATMENT.

There is little doubt that treatment in the early stages limits the progress of the disease. The treatment is essentially local and should aim to destroy the affected area. Tincture of iodin applied freely appears to be the best agent for this purpose. Lunar caustic, phenol and chromic acid have been used. It is believed that in some cases the actual cautery would be the most effective agent. An antiseptic mouth wash should also be used. Tonic treatment when indicated should be used. Potassium iodid even in large doses and long continued appears to have no effect on the disease. In chronic cases deodorants should be used. Potassium permanganate, in 1 per cent. solution has proved the most advantageous. When possible, complications should receive their appropriate treatment. It seems reasonable to believe that the *x*-ray, Finsen light and radiotherapy would be of service in the treatment of this disease, more especially in the chronic external ulcerations. In the fulminating type, treatment should be symptomatic, combined with active local disinfection.

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THE BACTERIA IN SCARLATINAL AND NORMAL THROATS.*

GUSTAV F. RUEDIGER, M.D.
CHICAGO.

INTRODUCTION.

It is a well established fact that streptococci are constantly found in great abundance on the tonsils of scarlet fever patients. This was shown very clearly by the investigations of Weaver, Baginsky and Sommerfeld, Charlton, Charbade, Booker, Taugl, Klein, Kurth and

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others. It is also well known that these organisms are frequently found on the tonsils of healthy persons, although not in such great abundance as on the tonsils of scarlet fever patients. Hilbert, Tunnicliff, Dungern, Schweighofer and Widal and Bezancon state that they found them in all normal throats which they examined. Others, however, did not find them so constantly. Black found them on only 30 per cent. of the normal tonsils which he examined. Netter found them in 5.5 per cent.; Kurth in 8 per cent.; Podbielsky in 2 per cent. and Dornberger in 45 per cent. of the normal throats examined by them. In most of these investigations no detailed study was made of the streptococci that were found. In some investigations glucose-broth tubes were inoculated with material from the tonsils, and if cocci were found in chains after incubation of the tubes it was concluded that streptococci were present. Apparently no further study was made of the cultures. In consideration of this fact it was thought worth while to take up this question again and make a more detailed study of the different strains of streptococci and diplococci which may be isolated from scarlatinal and normal throats.

METHOD OF STUDY.

Through the researches of Schottmüller[1] and of Rosenow[2] we know that pneumococci produce green colonies in blood-agar plates while *Streptococcus pyogenes* produces small grayish colonies which are surrounded by a perfectly clear area of hemolysis. Schottmüller also pointed out the fact that there are streptococci which produce green colonies in blood-agar plates, very similar to the pneumococcus colonies. In this study I have made use of these facts in isolating *Streptococcus pyogenes* from material obtained from the tonsils. A sterile cotton swab was rubbed against the tonsils in such a manner as to avoid the tongue as much as possible. The swab was then rinsed in 1-1.5 c.c. of sterile broth and the latter was used immediately to inoculate three or four blood-agar tubes, and the same number of litmus inulin-agar[3] tubes, which were poured into plates and incubated for 24 to 48 hours at 36° C. Blood-agar was prepared by melting plain agar tubes, cooling to 45° C. and adding .5 c.c. of sterile defibrinated rabbit blood or human blood to each tube.

After 24 hours' incubation it is possible to pick out the *Streptococcus pyogenes* colonies in the blood-agar plates, as they are small gray colonies which are surrounded by a perfectly clear area of hemolysis. It must be remembered, however, that diphtheria bacilli and pseudodiphtheria bacilli may produce hemolyzing colonies which may closely resemble the streptococcus colonies. Furthermore, I have occasionally found colonies of pneumococci and closely related organisms which produce considerable hemolysis and may therefore be mistaken for *Streptococcus pyogenes* colonies. The pneumococcus colonies are not easily recognized in these plates as there are always found in the throat many chain-forming cocci which form green colonies like the typical pneumococcus colonies. In all instances subcultures were made from 4 to 8 hemolyzing colonies and the same number of green colonies. These cultures were studied morphologically and culturally and their fermentative power was tested in Hiss'[4] inulin serum-water medium or in a slightly modified medium which was prepared as follows: Dissolve 5 grams of NaCl, 20 grams of peptone (Witte) and 20 grams of pure inulin in 1,000 c.c. of distilled water. Add 20 c.c. of a 5 per cent solution of pure litmus and tube, putting 2 c.c. of the mixture into each tube, and sterilize in the autoclave. After sterilization, add (with a sterile pipette) 2 c.c. of sterile heated ascites fluid[5] or preferably heated beef serum, to each tube and incubate for 24 hours before using. The beef serum was collected without taking any special precautions, but was diluted with an equal volume of water and passed through a large Berkefeld filter, drawn off into 50 to 100 c.c. tubes and heated to 65° C. for one-half hour on two successive days This medium was preferred to Hiss' serum-water because it was found that some pneumococci and some streptococci which have been recently obtained from blood cultures do not grow well in the latter.

In the early part of this work no litmus inulin-agar plates were used but pneumococci were looked for among the green colonies in blood-agar plates. In those cases subcultures were made and studied from 10 to 12 green colonies. Organisms were classed as typical pneumococci only when they were found to be: 1. Gram-positive cocci which grew chiefly in pairs on blood-agar or serum-agar slants; and 2, which fermented inulin; and 3, produced green or slightly hemolyzing greenish colonies in blood-agar plates.

In the litmus inulin-agar plates most pneumococci produce red colonies which are easily recognized on the blue background, and as practically no other mouth bacteria produce red colonies in this medium[6] it is easy to isolate pneumococci from the mouth and throat with the aid of these plates. Subcultures were, however, always made from 2 or 3 red colonies, and the organisms positively identified. In no instance have I isolated an organism by this method which could not be classed as a pneumococcus, although some of these organisms form chains of considerable length in some liquid media and do not seem to have a well formed capsule.

RESULTS.

A total of 154 throat cultures were made and examined as follows: Normal, 51; scarlatina, 75; measles, 14; tonsillitis, 5; pneumonia, 5, and pharyngitis, 4. The findings differ very widely and must be considered under separate heads.

Scarlatina.—All the blood-agar plates inoculated with material from scarlatinal throats contained many *Streptococcus pyogenes* colonies and varying numbers of green colonies. This is shown by Figure 1 which is a photograph of one of these plates. The cases may be roughly divided into three great groups: 1. Those from which the plates contained mostly (60 to 95 per cent.) *Streptococcus pyogenes* colonies—31 cases. Two sets of plates contained only *Streptococcus pyogenes* colonies. 2. Those from which the plates contained about as many *Streptococcus pyogenes* colonies as green colonies—23 cases. 3. Those from which the plates contained fewer *Streptococcus pyogenes* colonies (15 to 40 per cent.) than green colonies—21 cases. As a rule, the *Streptococcus pyogenes* colonies greatly predominate over the other colonies when the inflammation of the throat is pronounced, and they rapidly decrease in number with the subsidence of the throat symptoms. When the throat symptoms are mild the proportion of *Streptococcus pyogenes*

1. Münch. med. Wochft., 1903, vol. l, p. 909.
2. Journal of Infectious Diseases, 1904, vol. I, p. 308.
3. Prepared as described in the Journal of Infectious Diseases, 1906, vol. III, p. 183.
4. Jour. Exper. Med., 1905, vol. vi, p. 317.
5. Great care must be observed not to use ascites fluid which contains fermentable carbohydrates. Each lot must be tested with organisms that are known to have great fermentative powers and if acid is produced it must not be used.
6. See Journal of Infectious Diseases, 1906, vol. III, p. 183.

colonies to the other colonies is often very small. I have met with one exception to this rule in the case of a small girl who had a very bad throat, but the plates inoculated with material from it contained far more green colonies than *Streptococcus pyogenes* colonies. A large proportion of the green colonies in this set of plates were typical pneumococci which proved to be highly virulent for rabbits.

Pneumococci were not looked for in 4 cases, but were found in 64 of the 71 throats that were examined for them—91.4 per cent. Diphtheria bacilli were found four times and *B. mucosus* and *B. influenzæ* once. *Staphylococcus aureus* and *citreus* and *Micrococcus tetragenus* were found occasionally, but these were probably contaminations from the tongue. Gram-negative diplococci which form small brownish colonies were found quite frequently. These were not always studied in detail, but some were identified as *Micrococcus catarrhalis*.

Normal Throats.—All blood-agar plates inoculated with material from normal throats contained many green and slightly hemolysing, often greenish, colonies. *Streptococcus pyogenes* colonies were found in 30 of 51 throats which were studied, but were never present in large numbers (Fig. 2), and were entirely absent in 21 cases. In only 5 sets of plates did I find more than 10 per cent. of *Streptococcus pyogenes* colonies, and in 18 sets there were only 1 per cent. or less of these colonies. Not infrequently one finds hemolyzing colonies in blood-agar plates which, on closer study, are found to be organisms that produce greenish colonies in subsequent plates. Great care must, therefore, be exercised in deciding on the presence or absence of *Streptococcus pyogenes* colonies. The small, slightly hemolyzing, often greenish, colonies of organisms other than *Streptococcus pyogenes* also are very puzzling and will be described more fully in a later publication. It may be mentioned here that sugar fermentation tests were frequently used in classifying these organisms. Pneumococci were found 45 times (90 per cent.), and diphtheria bacilli 3 times. Gram-negative diplococci and staphylococci were found frequently and *B. mucosus* and *B. influenzæ* once.

Measles Throats.—The findings in the throats of measles patients correspond closely to those of normal throats. *Streptococcus pyogenes* was found in 9 of 14 throats which were examined (65 per cent.) and pneumococci were found in 12 (85.7 per cent.).

Tonsillitis.—*Streptococcus pyogenes* colonies always predominated in these plates, but green colonies also were present. Pneumococci were found in 4 of the 5 cases examined, but were not specially looked for in the other case. In one case influenza bacilli were found in great abundance.

Pharyngitis.—Four cases of so-called pharyngitis were examined, but none of the blood-agar plates inoculated with material from these throats contained *Streptococcus pyogenes* colonies. All plates contained many green colonies and some contained small brownish colonies. The latter were chiefly Gram-negative cocci, but in one case they were influenza bacilli. Pneumococci were isolated from all of these cases. The finding of pneumococci in such a larger per cent. of throats of persons not afflicted with pneumonia is in agreement with the work of the Commission for the Investigation of Acute Respiratory Diseases of the Health Department of the city of New York.[7]

Pneumonia.—Three of the five sets of plates inoculated with material from the tonsils of pneumonia patients contained very few *Streptococcus pyogenes* colonies and the other two sets did not contain any. All blood-agar plates contained many green colonies and the litmus inulin-agar plates contained many red colonies. Typical pneumococci were easily isolated from all plates.

It will be noticed that green colonies were found in all blood-agar plates, except two sets, which were inoculated with material from scarlatinal throats. Only a small proportion of these colonies are pneumococci and the remainder form a large group of organisms between the typical pneumococci and streptococci. Some of these organisms seem to correspond to Schottmüller's *Streptococcus viridans*, but others are very closely related to the pneumococcus. The organisms of this large group have very little virulence for rabbits and seem to be normal inhabitants of the throat, especially the pharynx.[8]

VIRULENCE OF STREPTOCOCCI AND PNEUMOCOCCI ISOLATED FROM THROATS.

Most hemolysing streptococci and some pneumococci isolated from scarlatinal and normal throats have some virulence for rabbits, but *Streptococcus viridans* has practically no virulence for these animals. Thirty-one rabbits weighing from 900 to 1,200 grams were injected intraperitoneally with *Streptococcus pyogenes* cultures as follows: Four rabbits with a suspension of two forty-eight-hour blood-agar slant cultures of organisms isolated from normal throats. Three of these animals died and one remained well. Twelve rabbits with the same amount of suspension of organisms isolated from scarlatinal throats. Eight of these animals died and four remained well. Eight rabbits with a suspension of one blood-agar slant culture of organisms isolated from normal throats. Five of these animals died and three remained well. Seven rabbits with a suspension of one blood-agar slant culture of organisms isolated from scarlatinal throats. One of these animals died and six remained well.

These results indicate that streptococci isolated from normal throats are slightly more virulent for animals than those isolated from scarlatinal throats. This is in perfect agreement with the results obtained by Hilbert[9] and Tunnicliff.[10]

Streptococcus viridans has a lower virulence for rabbits than *Streptococcus pyogenes*, as has already been indicated. Nine rabbits weighing from 900 to 1,200 grams were injected into the peritoneum with two blood-agar slant cultures of different strains of these organisms, but only one of these animals died.

Ten rabbits were injected with two blood-agar slant cultures of different strains of pneumococci isolated from normal and scarlatinal throats. Four of these animals died and the other six remained well. Fourteen rabbits were then injected with larger doses, but only five of these died. There are no indications that pneumococci in scarlatinal throats are more virulent than those in normal throats, with the one exception referred to above.

CONCLUSIONS.

Streptococcus pyogenes is constantly found in great abundance on the tonsils of patients suffering from tonsillitis and scarlet fever before the inflammation of the throat has subsided. These organisms rapidly decrease in numbers with the subsidence of the throat symptoms.

7. Journal of Exper. Med., 1905, vol. vii, No. 5.

8. A more detailed description of these organisms and of different strains of *Streptococcus pyogenes* will be given in the Journal of Infectious Diseases.

9. Zeitschr. f. Hyg., 1899, vol. xxxi, p. 381.

10. Trans. Chicago Path. Soc., 1904, vol. vi, p. 175.

Streptococcus pyogenes can not be considered a normal inhabitant of all healthy throats, although it was found in small numbers in 58 per cent. of the normal throats in this series.

Pneumococci of low virulence were found in 135 of this series of 154 throats.

A large group of organisms which lies between the typical *Streptococcus pyogenes* and pneumococcus was found in all normal throats and in nearly all diseased throats. These organisms have very little virulence for rabbits, and, as they are found in great abundance in practically all throats, they appear to be normal inhabitants of the throat.

Streptococcus pyogenes from normal throats appears to have a slightly greater virulence for rabbits than these organisms from scarlatinal throats.

I am indebted to Professor Hektoen for many suggestions and to Dr. W. L. Baum for the privilege of getting throat cultures from patients under his care at the Cook County Hospital.

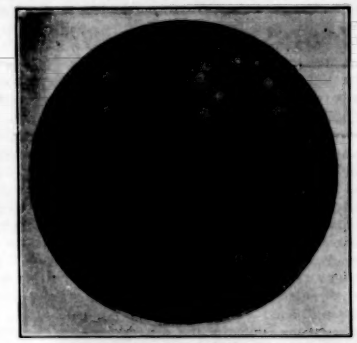


Fig. 1.—Photograph of a blood-agar plate inoculated with material from a scarlet fever tonsil. Many *Streptococcus pyogenes* colonies (hemolysing) and few small green colonies.

Fig. 2.—Photograph of a blood-agar plate inoculated with material from a normal tonsil. Many small green and slightly hemolysing colonies and 5 *Streptococcus pyogenes* colonies.

DISCUSSION.

Dr. M. J. Rosenau, Washington, asked Dr. Ruediger why he considers this hemolysis? It is commonly understood that in hemolysis, while there is a destruction of the red corpuscles and liberation of the hemoglobin, there is no alteration of the coloring matter. In the plates shown by Dr. Ruediger there is apparently a destruction of the hemoglobin indicated by the clear bleached areas. Perhaps this phenomenon is due more to a proteolytic ferment than to hemolysis.

Dr. Henry A. Christian, Boston, asked if the amount of carbohydrates affect the growth of these bacteria, and what methods should be used in detecting the presence of carbohydrate and in proving that it is the carbohydrate that inhibits.

Dr. G. W. McCaskey, Fort Wayne, Ind., said that the presence of streptococci in the various secretions and exudates is of the highest importance, as they furnish possible foci for active local or general infections. He has made many routine examinations of the feces in the study of gastro-intestinal disease and has found these organisms in a considerable proportion of cases. Their number in the lower segments of the digestive tube is small in proportion to the great mass of colon bacilli, but if the search is sufficiently thorough they will be found more often. In several cases he has had good reason to believe that intestinal streptococci were points of departure for serious infections. In one such case previously published there was a fatal general streptococcus infection. He found the streptococcus in the cerebrospinal fluid obtained by lumbar puncture, in the blood drawn from a vein in a sterile syringe and transferred immediately to 100 c.c. of bouillon at the bedside, while this organism instead of the colon bacillus was found to be the predominant one in the feces.

Dr. Gustav F. Ruediger, Chicago, said he considered it hemolysis because it is a destruction of the corpuscles rendering the medium transparent. The opacity due to the corpuscles is destroyed, but there is not a total destruction of the hemoglobin. In regard to Dr. Christian's question concerning the carbohydrates in ascites fluid, he had made tests with bacteria having a high fermentative power and not with copper test solutions. Mixtures of equal volumes of sterile peptone solution and ascites fluid were inoculated with an organism that he knew would ferment inulin and if acid was produced the ascites fluid was discarded.

In regard to the presence of diphtheria bacilli in the throats of scarlet fever patients, his percentage of cases giving positive results may be too low. About one-fourth of his cultures were made from the throats of patients who were known not to have diphtheria, because he was chiefly interested in the streptococci. The other three-fourths were made from patients as they came to the hospital. He does not believe that typical diphtheria bacilli are present as frequently as they are diagnosed by the internes, because in a number of cases he did not find them, although they were recorded on the history chart. The bacteriology of peritonitis is an interesting question and requires further study to ascertain whether the streptococci found are *Streptococcus pyogenes* or *Streptococcus viridans*. He has had only one occasion to study the bacteriology of a fatal case of peritonitis and the streptococcus in that case produced green colonies in blood-agar plates. Schottmueller speaks of finding *Streptococcus viridans* in cases of peritonitis resulting from perforation of the appendix; also in perityphlitic abscesses, lung abscess, bronchitis, otitis media and various other infections of regions so connected with the pharynx and respiratory tract that the infection might well be caused by organisms that normally inhabit the throat.

Writer's Cramp Cured by Elastic Ligature.—Hartenberg relates that he was consulted by a clerk who had suffered for fifteen years from intermittent writer's cramp. He was ordered to apply an elastic ligature to the arm, above the biceps, according to Bier's technic, for twenty minutes morning and evening, not altering his habits otherwise. The results were surprisingly good, as Hartenberg shows by specimens of the handwriting before and after, reproduced in the *Archives de Neurologie* for July, 1906.

THE SYSTEM OF PERSONAL IDENTIFICATION BY FINGER PRINTS RECENTLY ADOPTED FOR THE U. S. ARMY.

J. R. KEAN, M.D.
Major and Surgeon, U. S. Army.
WASHINGTON, D. C.

Some system of personal identification is a necessity in armies, and is of special importance in this country, not only for convenience of military administration to purge the Army of criminals, repeaters and other undesirable characters who may have gained admission to it by fraudulent enlistment, but also to protect the interest alike of the government and the individual in cases of claims against the former, based on the fact of military service. It may also assist under some circumstances in the identification of the dead.

MODIFIED BERTILLON SYSTEM.

The system first adopted in the U. S. Army was an adaptation of the pathologic division of the Bertillon system, viz., description of moles, scars, tattoos, blemishes, etc., together with certain simple measurements and physical characteristics, such as height, color of hair, eyes and skin. The complete Bertillon system was not adopted because it required the use of bulky and expensive instruments for exact measurements, and considerable practice and skill in their manipulation to avoid a degree of inexactness which would defeat the system, and also because of its disagreeable association with police methods of detecting criminals.

This system, adopted in 1889, fulfilled very satisfactorily for our small Army during a decade the special purpose for which it was introduced, namely, to check the custom of "repeating," by which is meant the fraudulent reënlistment, usually under an assumed name, of deserters and dishonorably discharged men. Besides ridding the Army of undesirable material which injured its discipline, lowered its moral standard and discredited its uniform, this system was found in the first seven years of its operation to have reduced desertions to the extent of an average of 1,300 a year as compared with the seven years preceding its adoption. As the estimated loss to the government by each desertion for clothing, transportation, pay, etc., is $260, this represented a money saving of $338,000 a year.

In the course of fifteen years, and especially subsequent to the Spanish War, when the Army was increased in size, although its use was not extended to volunteer troops, this system broke down because, after the number of cards became large, no system could be found of devising a method of extending the limited classification with any degree of accuracy. On March 31, 1901, over 200,000 transcript cards were on file, and the number of cards with which each outline figure card of an original enlistment had to be compared became so great that the labor and time involved in the operation became excessive, so that it became inoperative even as to the delinquent class, while it was not adapted to the other uses mentioned above.

Fig. 1.—Sample record, finger prints side (reduced one-third).

FINGER-PRINT SYSTEM.

Under these circumstances a board was appointed Oct. 11, 1905, to investigate the various systems of personal identification now in use, and, after an exhaustive study of the subject, it recommended the adoption of the finger-print system, supplemented by a photograph and brief personal description. For the latter the outline figure card used heretofore is to be employed, but with fewer entries.

The reasons given by the board for preferring the finger-print system of Galton, as improved by Henry, to the anthropometric system of Bertillon are: 1. Its greater simplicity of operation. 2. The small cost of the apparatus required. 3. The fact that all the skilled work required is transferred to the central office, and so it is only there that experts are required. 4. Greater rapidity of operation. 5. Greater certainty of results.

Galton has shown that the papillary ridges on the palms of the hands and the soles of the feet, in which are situated the mouths of the sweat glands, are clearly de-

veloped in the newborn child and are permanent throughout life, and as long after death as the epidermal structure remains undestroyed by putrefaction or other causes. Also, the patterns made by these lines on the finger bulbs are unique and characteristic for each individual. says Galton:[1]

There appear to be no bodily characteristics other than deep scars and tattoo marks, comparable in their persistence to these markings; at the same time they are out of all proportion more numerous than any other measurable features. The dimensions of the limbs and body alter in the course of growth and decay; the color, quantity and quality of the hair, the tint and quality of the skin, the number and set of the teeth, the expression of the features, the gestures, the handwriting, even the eye color, change after many years. There seems no persistence in the visible parts of the body except in these minute and hitherto disregarded ridges.

As their persistence is thus co-equal with somatic existence, and their variety of pattern infinite, so as to exclude possibility of identity in different individuals, it is evident that in them we have a perfect basis for a system of personal identification, if only a practical method of classification can be devised which admits of extensive subclassification. E. R. Henry, commissioner of police of the metropolis of London, at that time inspector-general of the Lower Provinces, India, has succeeded in doing this in a way which is both simple and satisfactory, and which has been widely adopted by the police departments in India, England, many cities of the United States, throughout Australasia and for the registration of native and Chinese laborers in South Africa. The apparatus used is simple and inexpensive, ordinary white paper, not too highly glazed, printer's ink, a piece of flat tin fastened on a board, and a roller for spreading the ink thereon. In our Army there is also a form holder to hold the card in which the impressions are taken (Fig. 1). Although the impression of any one finger is sufficient for identification, the impressions of all ten are taken for the purpose of classification.

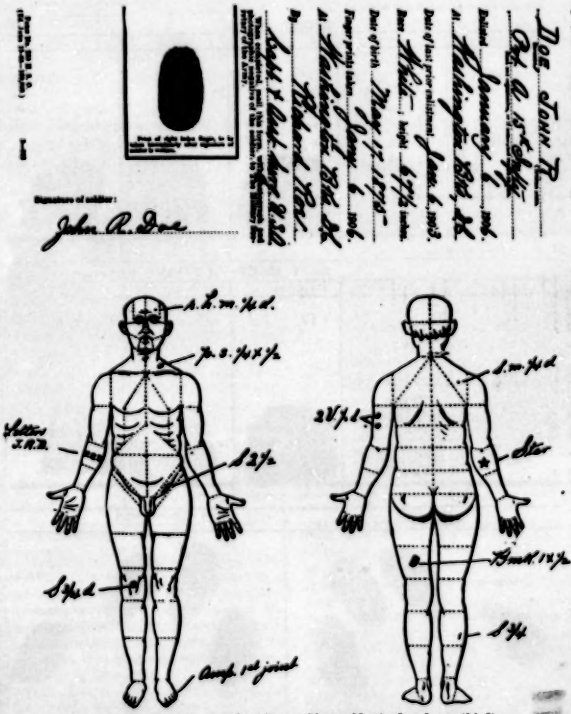


Fig. 2.—Sample record, skin markings side (reduced one-third).

one finger is sufficient for identification, the impressions of all ten are taken for the purpose of classification.

PROCEDURE.

The process is as follows: A few drops of printer's ink are placed on the tin and spread in a thin even film by means of the roller. The operator then takes the right hand of the person whose finger print is to be taken and turning it palm out in a position of extreme pronation, places the thumb on the tin and turns the hand until the palm faces inward, thus applying a thin coating of ink to the palmar surface of the last joint of the thumb. He then places the thumb on the paper in the upper right-hand compartment, with palm of the hand out (away from the body), and rolls the thumb until the palm is inward and the whole palmar surface of the last joint of the digit has been applied to the paper. The same process is then gone through with for each finger of both hands. This is called the rolled print, and is that used for identification. Then the four fingers of each hand, held together, are touched to the ink film and then to the paper simultaneously without any turning movement. These are called plain impressions and are useful to verify the sequence of the rolled impressions. Thus, if, by error, the latter should not be taken in proper sequence the fact can be discovered and the error corrected from the plain impressions. Finally, on the briefing fold on the back of the blank (Fig. 2) the plain impression of the right index finger is taken just above the soldier's signature. His conspicuous scars, tattoos and other marks are then noted on the outline figures, front and back, his height taken, the entries on the briefing fold filled in and the form is complete. A photograph taken at a fixed distance of 54 inches with a standard lens, both of full face and profile, is then taken (Fig. 3), and a print made from the negative. This print and the negative, together with the

1. Henry, E. R.: "Classification and Uses of Finger Prints," p. 18.

finger prints, are then sent by mail to the War Department, Washington for file.

CLASSIFICATION.

The method of classification and file of the finger prints is, briefly stated, as follows: The patterns of finger prints are divided into two general classes, loops and whorls. In the former are included the arches and in the latter the composites. Each of the ten prints will be there, either a loop or a whorl, designated L or W, respectively, and the ten digits, being taken in pairs, there will be four possible combinations of each pair, which are written as a key thus:

LL	LW
WL	WW

Since we have the same number of combinations for the second pair, each of which can be combined with each arrangement of the first pair, the total number of combinations will be 16 for the two pairs; 64 for three and 1,024 for the five. This number being the square of 32, a cabinet containing 32 sets of 32 pigeon holes each will be necessary for all combinations of the loops and whorls of the ten digits taken in pairs. This cabinet is divided into four quarters by a vertical and a horizontal bisecting line, each containing 256 pigeon holes, each quarter in the same way into 4 eighths, each eighth into 4 sixteenths, and each sixteenth into 4 thirty-seconds, containing 4 pigeon holes apiece.

Fig. 3.—Form of photograph adopted as part of the identification record system (reduced in size).

If a finger print is received for file in which, for example, the right thumb is a loop, the index a whorl, the middle finger a whorl, the ring finger a loop, the little finger a loop, the left thumb a loop, the left index a loop, and so on, the formula for the print would be LW, WL, LL, WW, LW. By reference to the key above given, the first pair of letters, LW, would be seen to be in the upper right quarter of the key, which would locate the card in the upper right quarter of the cabinet. The second pair, WL, would further locate it in the lower left sixteenth; the third pair, LL, in the upper left sixty-fourth division; the fourth pair, WW, in the lower right two hundred and fifty-sixth division, and the fifth pair, LW, in the upper right pigeon hole of that division.

To subclassify the cards in a pigeon hole from each other and break up large accumulations in one compartment of the above primary classification, a secondary system of classification is made based on the occurrence of arches and loops which are radial or ulnar in position with reference to the index finger or fulcrum.

A still further differentiation is made by counting the number of ridges which intervenes between characteristic fixed points in the impression of a finger, known as the inner and outer terminus, and by noting other characteristics of the ridges with reference to them. For the details of this method the reader is referred to the little book by Henry.[1]

BENEFITS OF THE SYSTEM.

An expert in searching for a duplicate by these methods can find it in five or six minutes if it exists in a record of 100,000 cards.

This system will be very valuable in obviating the necessity of much correspondence and collection of evidence at present required to prove identity in cases coming before the War Department and the Pension Bureau. After the introduction of this system, any man who has had service in the Regular Army, can at once establish his identity by placing his right forefinger on the ink pad of an ordinary rubber stamp and making a finger print below his name. Unknown dead, brought from battle fields into field hospitals, or who die there, can in this way give a record which will lead to their identification; and a copy of the finger print buried in a vial with the body will be a permanent and certain identification of it. It is expected that the new system will be put in operation soon after Oct. 1, 1906.

THE TREATMENT OF FRACTURES OF THE PATELLA.*

JOSEPH RANSOHOFF, M.D., F. R. C. S.
CINCINNATI.

This theme certainly lacks the element of novelty, since Barton gave the impulse toward its solution by operation, in 1834. Nor is there any dearth of numerical data to shed light on it. Seven years after the report of the first successful cases of the antiseptic period by Cameron and Lister, Jalaguier, in 1884, was already enabled to collect ninety-four cases of patellar suture with five deaths from infection, not to mention a few disasters like ankylosis, amputation, etc. Eight years ago Powers collected over seven hundred additional cases from literature and from personal reports. The surgeon who is fond of figures, can find few richer fields for statistical deduction than is afforded by the enormous literature at his command. The harvest may be rich. I gladly leave it to another, for farming of this sort is little to my taste.

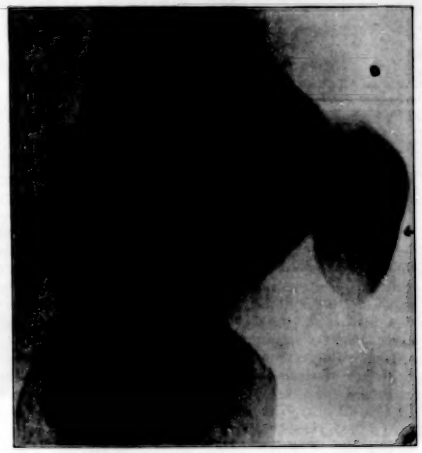
The fact that the entire question is brought before this tribunal at this seemingly late day, by request, is proof of the unsettled state of some of its features, and perhaps in an irrelevant way, of the slowness of the surgical mind to determine definitely that any one thing is the right thing to do, if another that is not very far wrong can be done.

This brings us at once to the meaty feature in the contention between conservatism and operation in the treatment of fractures of the knee cap. Good and even excellent results can be obtained by conservative measures in many cases, even if a restitution to the normal is not thereby attainable. Operation is, therefore, always one of expediency only. Many years ago, it is said, Malgaigne offered a large monetary prize to him who would show him a bony union of a broken patella. In his classical brochure, published in 1880, embodying a study of one hundred and twenty-seven cases, Hamilton concludes that under any plan of treatment a fibrous

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

union of the fragments is all that can be expected, and that probably a fibrous union with a separation of half or three-quarters of an inch is as useful as a bony union.

To understand the varying, functional limitations which may follow fractures of the patella, there must be a clear understanding of the physiologic value of the patella as constituting only a part of the extension apparatus of the leg. The subperiosteal removal of the patella in the cadaver does not annul the extensibility of the leg at the knee when traction is made on the quadriceps. This experiment is easily verified in the dissecting room. In a few cases in which the entire patella was removed *intra vitam* for tuberculosis, for example, there was little impairment of the power of extension. Complementary to the patellar ligament are the lateral expansions of the quadriceps tendon, the wings or "ailerons" of French anatomists, the fibers of which springing chiefly from the Vasti strengthen the joint capsule and are in part inserted into the enveloping fascia of the leg. Tillaux depicts the lateral patellar ligament as running as far back as the origin of the gastrocnemius.



Fracture in posterior surface of patella.

These anatomic data, far from new, explain the comparatively little limitation of motion at the knee, when even wide diastasis of the fragments exists. In two patients, whom I have been enabled to follow for long periods, in one of whom there was a fracture of each patella, I have seen the power of extension remain stationary in the face of a growing disastasis of the patellar fragments. The chief inconvenience of fibrous union in fractures nearly limited to the patella itself is the insecurity of the joint in extension. These patients fall easily, and it is a matter of common experience that with the laying aside of some protecting knee cap the patient sustains a refracture, or, more properly speaking, a tear through the uniting fibrous bands. In these refractures, if the appellation is justified by long usage, the rent of the parapatellar expansions of the quadriceps is of necessity more extensive than after the original injury. Every surgeon who has operated often for patellar fracture has operated after the recurrence of the second fracture because of the greater disability it entailed.

A logical conclusion of the foregoing considerations is the reserving of conservative treatment to cases in which the damage is largely limited to the patella. The absence of large diastasis and crepitus as indicating the approachability of the fragments without intervening fascial shreds would speak for non-interference. Fortunately, also, the etiology of the injury and at least one symptom helps us to recognize these cases. Direct fractures from falls or blows on the knee cap are of commoner occurrence than the pure indirect fracture from muscle strain. So far as I can make out from an examination of the histories of fifty-one cases observed in the Cincinnati Hospital twenty-six, or nearly 50 per cent., are clearly of this type of direct fracture. In only fourteen of the cases, or 27 per cent., was it fairly assumable that a cross strain produced the fracture. In this connection it is of importance to bear in mind that even direct fractures of the patella are almost always transverse. This I have demonstrated on the cadaver in over twenty subjects when the blow was delivered with the knee in forcible flexion. As might be expected, there is often no perceptible separation of the fragments and none is possible by most forcible traction on the quadriceps until the tear is made to extend into the parapatellar extensions. In experimental work along this line I have produced direct subperiosteal fractures, which could only have been demonstrated *intra vitam* by an *x*-ray exposure, or by the linear tenderness so characteristic of subperiosteal fractures in general. A study of the plates of fractures so produced shows that, contrary to every expectation, they often start from within, and that the gap is widest on the joint surface of the patella (see ilustration). In some plates it appears that the fracture, when incomplete, leaves the cutaneous surface intact. I have no data to explain this, but the phenomenon may explain the hemarthros, which so often follows injuries of the knee, in which a fracture is not even suspected. Perhaps most frequent *x*-ray examinations of this kind will reveal fractures of the patella to be of commoner occurrence than they now seem. A longitudinal fracture could only be produced on the cadaver by a blow delivered on the lateral margin of the bone and did not show in the radiograms taken.

Although there is often considerable comminution in these direct fractures, the main line is transverse or nearly so. Here, however extensive the bone comminution may be, there is no great separation of the fragments until, as often doubtless happens, the lateral expansions of the tendon give way in the effort of the patient to save himself from falling after the bone has given way.

There is one way in which to ascertain the integrity of the parapatellar wings as proven in fracture of the patella. It is by the ability of the patient to extend his leg or to lift it with some little assistance, and that within a few days of the accident. This symptom might, in my judgment, be invested with the dignity of a sign pathognomonic of an intact capsule. Its presence should for many patients and most surgeons militate against operative interference, unless this be limited to the aspiration of the joint exudates.

Surely the words of Lister uttered thirty years ago in regard to the general question of operation for fracture of the patella are applicable now to the class of cases

under consideration. "No man is justified in performing this operation unless he could say with a clear conscience that he considers himself morally certain to avoid the entrance of any septic mischief into the wound."

It is beyond the scope of this paper to discuss any of the scores of methods of treatment by splints, adhesive dressings, elastic extension, plaster of paris and the many mechanical devices. They may all be good, but they certainly all are bad if continued in use too long or if they are made the chief factor of the treatment. The intra-articular hemorrhage, if at all extensive, not only by pressure tends to keep apart the patellar fragments and to tilt them outwards, as has been shown in innumerable radiograms, but by aseptic irritation leads, after its slow absorption, to a shrinking of the synovial sac and to adhesions, which to a large extent account for the restriction of joint movements. Where, therefore, non-operative measures are to be adopted, two factors are essential to good functional result. First, aspirate the joint as soon as feasible; second, within ten days or two weeks, massage and passive movements should be made, and retentive dressings used only while the patient is permitted to go about on crutches. There is no other way to forestall the atrophy of the thigh, which is an almost constant sequel of a broken cap and a menace to the other patella.

The thought is uppermost that if the conservative treatment fails an operation may be beneficial if performed later as it is in other ununited fractures. While my personal experience is limited, it has been sufficient to satisfy me that a hope based on such a thought will be frustrated. The most difficult operations I have had have been in delayed cases with wide diastasis. The approximation is so difficult that I have decided in such a case in the future to entirely extirpate the patella. Indeed, one of the most satisfactory results I have had has been in compound, badly comminuted fracture, in which suturing was impossible, and in which practically all of the patella was excised. If conservatism is to be practiced, it should not be as an expedient to be supplemented by a later suture, but on the assumption of the integrity of the patellar anatomic complement.

At this juncture I would invoke the exercise of that common sense which regards not only the fracture of the patella, but considers as well the age, the occupation and the station in life of the subject of that fracture. Manifestly, in functional value a fibrous union can never equal complete anatomic restitution, so that if there is any doubt as to the indication for either conservatism or operation the decision should be for the latter. In young persons and in those of the middle decades of life, particularly of the working classes, the taking of some risk is justified, as it would not be in older persons and in those who do not need their legs to live. Of the fifty-one cases tabulated for me treated at the Cincinnati Hospital, the average age was 39. Of the thirty-three non-operated cases, it was 40 years, and of eighteen operated cases, 35 years. Only five of the total number of patients were over 50, and twelve were 30 years of age or under. The entailment of some risk is justified when the indications for operation are clear, particularly in view of the fact that even non-operated cases occasionally succumb. Of our non-operative cases, two died —one of sepsis and the other of alcoholic leptomeningitis. Of 223 cases investigated by Thiem, six died. They were all subcutaneous fractures and were treated without operation.

Of the fifty-one cases admitted into the City Hospital ward, eighteen, or over 35 per cent., were subjected to operation. These figures do not reflect accurately the view point of the surgical staff, since nine of the non-operated cases either refused operation or left the hospital within the first week. In fact, 45 per cent. of the cases completely under control had some form of patellar suture made.

I believe this fairly reflects the trend of surgical practice, since the statistical contribution of Powers was published eight years ago and discussed by the American Surgical Association. It is that, if soon after the accident there is a diastasis of a third of an inch or more, a decided eversion of the fragments, where elevation of the limb is impossible and where there is a marked hemarthros, the indications seem clear that the patellar-capsular appendages are torn, and demand operative repair if even a fair result is to be attained. Of the seventy-five surgeons who responded to Powers' inquiries, no less than seventeen expressed themselves as opposed to operation in any case. Of those of the seventeen who were accessible and responsive to inquiries, Weir and Lilienthal have modified their views in favor of an operation in properly selected cases. A. T. Cabot at first confined operation to compound fractures. In a personal communication he assures me that in workingmen he now operates invariably. Dr. F. Tilden Brown would to-day operate in all cases unless some unusual condition presented. This swaying toward operation for fractures on the part of surgeons meets with an occasional exception. Thus Mueller recently claims that the postoperative results are not as good nor as quickly obtained as those from conservative methods.

It almost goes without saying that the only tenable objection to operation in suitable cases is the increased risk to limb and life. That this exists can hardly be questioned by the warmest advocates of operation. Of our own eighteen operations, one was followed by death from infection. Of 711 cases collected by Powers, there were only three deaths from sepsis, with no amputations. Powers himself does not believe that this represents the true mortality, and few are they who do not share his belief. I know of no way in which to estimate the mortality of suturing the patella. After looking over many series of hospital reports without finding more than an occasional death after patellar suture, I ought to be struck with the innocuousness of the procedure. But I am not, and fear that I never shall be. Twenty, even ten years ago, the statement of Kocher seemed justified (Schmidt) that the technic of asepsis would have to make many advances before the indications for patellar suture should be much extended. It can be stated, I think, that such advances have been made. Certainly, mishaps do not come as often in the last decade as they did in the first two after the publication of Lister's cases. To bear this out, the bad results, which are found in every large series, belong to the earlier years from which they are gathered. Nevertheless the opening of the knee will always be attended with danger. Therefore, no surgeon should operate for patellar fracture, even when it is plainly indicated, except under conditions insuring the greatest measure of safety. With these conditions in doubt, the peritoneum is confessedly a less dangerous field for operation than the knee joint. Let him who would venture an operation bear in mind that the man with a fractured patella may die, but the operation as one of expediency increases that danger somewhat.

With proper regard to environment and skilled assistants, I am convinced that operation is not only justified, but positively demanded when the conditions point to extensive involvement of the capsular expansions beyond the patella. The question at once arises. When shall the suture be made? Even ten years ago the doctrine was current that the safest time for operation is after from fifteen to thirty days. In the eighteen cases of our series operated on, the operation was performed twice on the second day, once on the third, twice on the fourth, and in the remainder, with the exceptions to be noted, before the fifteenth day. The average day of the early operations was the seventh day after the accident. In two it was twenty-eight and thirty days, respectively; in another three months, and in yet another seventy-nine days. The only fatality occurred in the patient operated on seventy-nine days after the accident.

This experience has convinced me that the dread of early interference in fracture of the patella is now unwarranted, as it has been shown to be in most surgical conditions calling for operation. Although by reason of the large joint opened there is no absolute likeness between the patellar and other subcutaneous fractures, I am sure that few surgeons would hesitate to open a recent fracture of a long bone, if there were no other way of keeping the fragments in apposition than by bone suture.

The average of stay in the hospital of the early operations was thirty-nine days, of the average non-operative cases it was sixty days. Of the late cases it was eighty-four days. The greater length of time and extent of dissection required in cases of longer standing than two or three weeks reduces the probability of an undisturbed postoperative course. From the more recent literature it is apparent that postoperative mishaps occur oftenest in cases of long standing and where the suture is made for so-called refracture. Nor can the end-results be as good, for the reasons above given when considering the results of conservative treatment. The difficulties encountered in the few late cases with wide diastasis I have seen have led me to abandon suture altogether in this class of cases. If I should find an operation at all indicated, I should, instead of endeavoring to overcome the great separation of the fragments, remove these fragments altogether and attempt a tendon plasty. The suggestion of Bergman and Pucet might in some cases be practicable. After dividing the patellar ligament at its attachment, it is moved upward as far as possible and fixed there with a metallic pin. It is certainly an ingenious way of approximating the fragments. The division of the quadriceps tendon transversely or in Y-shape has given good results to some operators.

It is manifestly improper to compare in a general way the end-results of operated cases with those conservatively treated. The comparison to be just must be made between fractures of the same degrees of severity, some of which have been treated one way and the rest by another. Of the difference in results there can be, in my judgment, no question to the unbiased investigator. Bony union along the length of the fracture, or at least along part of it, is the rule after suture, the proportion of such unions depending altogether on the methods of retaining them employed. As a compromise between conservative treatment and suture, many plans have been devised to hold the fragments in position by means of sutures of wire or catgut introduced circularly around or behind and in front of the patella. The various procedures of Barker, Ceci, Kocher, Berger and the purse-string suture of Roberts come in this category of compromise operations and are of about equal worth. They are based on the dread of free exposure of the joint. Not having had much personal experience of them, my judgment is worth little. I, nevertheless, venture the opinion that in the very simple cases when they might do good they all are superfluous, and in the severer ones they fail of three essentials to a good result, namely, cleansing the joint of exudates, the removal of tendinous and periosteal fringes from between the fragments and close approximation of the torn parapatellar, tendinous expansions and of the bone fragments. These indications can only be met by an open operation, which allows full inspection of the damage done by the trauma and a clean method of repairing it. How to do this is a matter of technic, the details of which vary with different surgeons and should vary according to the conditions found.

In the eighteen operations above alluded to, suture with silver wire was done five times, with kangaroo tendon or chromicized catgut nine times and circumferential or tobacco pouch suture was used in four cases. In a number of cases, it is difficult to state how many, the bone suture was followed by periosteal catgut suture. From the record of our cases it does not appear that those sutured with wire fared better than those treated with animal suture material. Of course, we have met the tribulation of having the wire break. In one of the cases it was necessary to remove the wires after the patient left the hospital. Since most of our cases could not be followed, it is impossible to state what became of the wires in the remainder. From a rather extensive investigation of the literature I am inclined to believe that the use of properly prepared absorbable suture material is displacing the wire, although in some of the more recent series of case reports, such as Hamilton of Edinborough, Körte and Mikulicz, wire was almost exclusively used.

As very considerable difficulty is encountered when the fracture is near the apex of the patella and when it is stellate, the purse-string suture of whatever material used is more applicable than an attempt to use the interrupted suture after the ordinary way. I have been impressed with the method of Perarresi, who, after making a periosteal suture as carefully as possible, reflects a square flap from the anterior fibers of the quadriceps tendon over the broken patella, and sews it to the patellar ligament below. By this teno-plasty the eversion of the upper fragment is easily overcome. Furthermore, since there is no drilling of the fragments, the danger of necrosis is avoided.

In my operations for fractured patella I have used the transverse incision in my earlier work. More recently I have used the curvilinear incision with convexity above or below. When the separation of the fragments is wide, the best access to the parts can be obtained by an incision with an upward convexity. It is almost needless to add that the success of the operation depends on the repair of the parapatellar expansions of the extensor aponeurosis.

In two of the cases remaining longest in the hospital, a considerable degree of ankylosis remained. I believe the result was more satisfactory than if they had been discharged with a wide gap. Although an ankylosis can hardly be called a success, it is a matter of common observation that a locked knee, if in good position, does not materially lessen the capacity of the individual for

even the hardest kind of work. Between the serviceability of the locked knee and the flail joint there can be no question. In properly selected cases the indications for an arthrodesis seem to me perfectly clear.

To secure the best results after operation, the retentive dressing should be tentatively removed after two weeks and passive and some active movements encouraged by the end of the third week, at the latest the fourth week.

In conclusion, I submit the following theses for your consideration:

First.—Fractures of the patella are often partial and subperiosteal and require no operative treatment even if recognized.

Second.—A master of aseptic surgery may operate in every case of patellar fracture where separation of the fragments can easily be recognized.

Third.—Where the diastasis indicates the involvement of the lateral expansions of the quadriceps, the indications for operation are plain, unless the valid contraindications alluded to in the body of the paper are present.

Fourth.—The proper time for operation is the first week.

Fifth.—The operation ordinarily indicated is the open operation with suture of the lateral tears and fixation of the fragments with one or other method.

Sixth.—In old standing cases with very wide diastasis of the fragments, excision of the latter and suitable tendon plastic will probably give better results than bone suture.

Seventh.—The knee joint will always remain for him who occasionally does surgery a most dangerous field for operative interference. For him a fracture of the patella should remain a *"noli me tangere."*

DISCUSSION.

Dr. Robert F. Weir, New York, stated that, seeing the dangers that have followed in the wake of these operations for fracture of the patella for a long time, kept him from surgical intervention in their treatment. Since other surgeons, however, have shown such good results, and especially now that no finger or instrument is allowed to enter the joint, and since he has seen the brilliant results which have followed this careful procedure, he has resorted to the operation in certain cases. He found, however, that some things are yet to be said. An *x*-ray of their best cases showed that in a large proportion of them there was not a bony union of the fragments, but only a fibrous union. Furthermore, Dr. Weir believes that only masters of surgery should operate in these cases of fracture of the patella, because it is the most risky operation we have to do to-day. He would rather have his abdomen cut open than his knee joint. He has found that one surgeon had an amputation following a fracture of the patella and another had an ankylosis and a third a fatal result. At the Roosevelt Hospital, in New York, these patients are only operated on when there is good reason to believe that the tear runs into the fibrous tissues on both sides; but in cases in which the rent is only on one side, they are very apt to treat the case by the conservative method. Dr. Weir declared, however, that notwithstanding that he does not resort to the operation in a restricted manner, if he were to sustain a fracture of the patella he would not want the knee joint opened.

Dr. Charles A. Powers, Denver, said that in the operative management of recent fractures of the patella there should be no contradiction on the part of the patient to the operation itself. It should be definitely restricted to patients of suitable age, patients with healthy viscera and vessels, and patients, who, after the pros and cons of the operation have been carefully explained to them, request the operation. Some twenty or twenty-five years ago Dr. Weir said that antiseptic surgery was not "cock-sure" surgery. That may be said to-day of a septic surgery. No man can open a knee joint and repair a patella with an absolute certainty that the patient will escape infection. He expects that he will escape infection, the patient will probably have no trouble; but there is always an element of risk, and the patient himself must take it. Dr. Powers believes that it is better in recent cases to wait five or seven, or, perhaps, ten days before operating. As to the operation itself, he advised the curved incision as recommended by Dr. Ransohoff, the removal of the interposed aponeurosis from between the fragments, washing out of the blood clots, and such suture as the surgeon may see fit to apply; the open operation, as Dr. Ransohoff says, should always be done. The results after the operative management in cases with a wide diastasis Dr. Powers believes are better than in cases treated without operation, but the patient is the one to decide and to take the risk. In old cases in which there is a wide separation and the fragments can not be approximated, scoring of the quadriceps extensor or its tendon or transplantation upward of the tubercle of the tibia will greatly permit the fragments to come together and a good suture can be made. Dr. Powers has never found it necessary to remove the patella.

Dr. Arthur T. Cabot, Boston, stated that he began in this work by wiring only in compound fracture. Since then he has acquired the habit of wiring the patella in all cases that come to the hospital when they occur in laboring men, in whom it is necessary to get a quick result. These men can not afford to lay up for six or eight or ten months to limber out a stiff knee. When the patient is in good circumstances, and can give the time to limbering out the knee afterward, Dr. Cabot frequently treats the case on the expectant plan by bringing the fragments together as closely as possible; but in those cases he thinks it is very important to put off passive motion for some six or eight weeks in order to allow the fibrous union to become as firm as possible. Patients treated in that way get a very good limb, but it takes a long time. He has not yet had an unsuccessful wiring, nor a case of sepsis. He appreciates, however, the danger of which Dr. Powers speaks. Dr. Cabot tells his house surgeons that he wants them to take more pains in disinfecting a knee than in disinfecting the abdomen for laparotomy, because the danger of infection is greater. The absorption from the knee joint is not nearly so good as from the peritoneum, and sepsis in the knee joint is more likely to occur than in the peritoneum. By taking excessive care the very great majority of wiring of knees can be done with perfect success. He has not yet had his unlucky case.

Dr. F. D. Gray, Jersey City, has had an experience within the last year which leads him to make some exception regarding the advisability of attempting late suture. The patient, a woman, had been operated on successfully for fracture of the patella about ten months before Dr. Gray first saw her. The operation had been performed very carefully by the surgeon in charge of the case and the result was a good one. The patient left the hospital at the end of four or five weeks. While under subsequent care of her family physician, a fracture took place, either through the carelessness of the physician or of the patient. Nothing was done to correct the trouble. After nine months the patient consulted Dr. Gray with a separation of the fragments of about two and a half inches. He told her that he would not promise anything in the way of results, but that inasmuch as her condition was so bad, he would do what he could by performing a secondary operation. He succeeded better than he expected in bringing the fragments together. The upper fragment was softened somewhat. He introduced two wire sutures, but one tore a little. He sutured the adjoining fibrous tissue with catgut and then put on a plaster splint which he kept on for two months. During the next four months gradual mobilization of the joint was effected, and to-day the patient walks with barely a limp. She can flex the knee to a right angle with the thigh and she can raise the foot from four to six inches from the floor, while sitting. The quadriceps extensor, of course, is still considerably atrophied.

Dr. J. Ransohoff, said that he wished to emphasize the desirability of taking as many *x*-ray pictures as possible in every case of hemarthrosis, in order to see whether the experimental findings which he reported can be confirmed by practical clinical experience.

THE OPEN-AIR TREATMENT OF PNEUMONIA.*

W. P. NORTHRUP, M.D.
NEW YORK CITY.

For more than eleven years I have been treating pneumonia patients in cool fresh air, gradually placing their beds nearer and nearer the open window. Last winter I put them out on the roof. It is not always practicable to make use of a roof, but what I have to say about the beneficial effects of open-air treatment is founded mainly on last year's experience at the Presbyterian Hospital, New York City. It comprises experience in all months of the winter.

Our systematic practice was to put all pneumonia patients during the day, for six hours, on the roof, in the open air, in all weather in which harsh high winds, rain and snow did not prohibit. Indeed, the patients were not always brought in for little sprinkling rains or trivial snowfalls, and many times were out when high snow banks formed a corral about the space in which the beds were grouped. A permanent wind-break formed by the sun room on the west and a built-up screen on the north protected them somewhat. Much of the time, however, the wind was in the south, and more often in the east. In this case a very inefficient canvass awning partially screened the patients, until one night in December high winds wrecked the canvas.

The practice of placing severely sick pneumonia patients in the open air in midwinter was not adopted without much observation and some self-education. Gradually, after most careful precautions and constant watching, it became the firm conviction of all observers that such patients were decidedly benefited thereby. At last it was decided on as a routine treatment.

No one is convinced by others' experience or by statistics. I am not going into figures, for the cases are too limited in number. I am not going to convince any one that they should adopt the routine treatment. I am only attempting to get some few to try it for themselves. If it seems to them to give a very sick patient the best chance for life, the method will survive criticism and be adopted. If it does not, it will deservedly fail.

Primary pneumonia in previously healthy infants and young children allows of good prognosis in over 90 per cent. of cases under any and all treatment. Even the worst treatment seldom kills them. They can survive constricting poultices, hot unventilated rooms, and coal tar antipyretics. It is the remaining percentage which we wish to save. We wish to support the patient in the fight, to give the blood, the organs and the body cells every aid in our power to counteract the deleterious effects of the infecting agent. I would not underestimate drugs, I would only magnify the therapeutic value of hygienic measures, especially water and fresh air. I would say that the two most important aids are plenty of water inside and outside and fresh air everywhere. The latter, as the title indicates, is the therapeutic agent here under discussion.

CASE SUMMARIES.

By way of illustrating, a few cases will be briefly outlined. In these cases, which everyone present will probably admit were serious cases, the body cells would seem to have been materially aided by open-air (on the roof) treatment.

Case 1.—A little girl, aged 3, came into the Presbyterian Hospital with frank lobar pneumonia. One large lower lobe was solid.

From examining the mouth the house physician suspected the possibility of developing measles. For this reason the child was moved temporarily into a small room adjoining the ward, and a screen bent around the bed. I happened in shortly after and found the child climbing about the crib, whining and worrying. The fever was high, the face dusky, the child evidently delirious.

On the arrival of the house physician he was amazed at the change in the child. While in the ward, where the air was fairly fresh and cool, the child was quiet and sleeping. It seemed that simply putting it into the small room behind the screen (and the air was not particularly warm or stale), had developed this duskiness and delirium. The child proved not to be developing measles, and was sent at once to join the others on the roof. It was wheeled to the elevator and thence into the open air. Shortly after its arrival there the mother came to pay it a visit. We may well imagine her state of mind, knowing our diagnosis. She was making known her feelings on the subject when I arrived for my second observation on the child during the same morning. The mother was standing beside the crib, scantily wrapped, and was nearly frozen. The crib was exposed to the full flood of east wind, though it was not 20 feet to carry the crib to place it behind an angle of the sun-room. I said to the mother in an interval between her remarks: "How does the child seem to you?" This took her unawares, and she ended by admitting that though she herself was rapidly chilling and beginning to shiver, the child seemed much better. It had fallen into a quiet sleep, its color was normal, its face wore a tranquil look such as it had not before shown. The mother and I parted friends, and we are still such.

This case is mentioned in detail to show how even the mother approved when once she saw the demonstration of the favorable effects. The child might possibly have recovered under any treatment, but the quieting effect of the December open air was most favorably shown.

A second case was one in which there is doubt whether the patient would have recovered if treated continuously in the ward.

Case 2.—A boy, aged 6, after operation for foreign body in the esophagus, developed double septic bronchopneumonia and recovered. The foreign body had been in the esophagus 13 days, had rendered feeding for that time almost impossible, one-half to one pint of milk a day being all the food that he could pass into his stomach. He was under observation for another week, in which time *x*-ray photographs were taken. At the operation the surgeon remarked that in most cases of late operation on the esophagus, whether the wound be closed or left open, the patients develop sepsis and die.

In this case there were extensive sloughs, the wound was left open, feeding without vomiting was fairly successful. For four weeks then the nourishment had been very imperfect, and the child was much reduced. At this juncture the temperature mounted and double bronchopneumonia developed. The child appeared to be in a most critical condition; its color was metallic and sallow, it sank in relaxation deep down in the bed, its respirations were rapid and shallow. It seldom opened its eyes.

The surgeon asked me whether I would recommend that this patient go on the roof. Thus far it seemed too much of a journey for so prostrated a child, and it had remained in the ward. Our judgment was that whatever was done for the child, it would not live three days. The house surgeon took the matter in his own hands, superintending the transportation, and put the patient on the roof for six hours a day. I heard the patient had not died, but forgot about it later.

On a chance visit to the surgical cases, the nurse, in a most cheerful voice, asked me if I was coming to the birthday party. I said of course I was, but asked whose party it was. "Theodore's party," she replied. After explanation I realized that the boy who had had double septic bronchopneumonia, who

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

had been operated on for foreign body of the esophagus, was celebrating his birthday with the other convalescents. The cake bore six candles.

Truly, I do not believe this patient would have recovered under old ward conditions and constant rest in the same air and environment. I could cite a few more cases in which the determining factor toward recovery was the cold, bracing, open winter air on the roof.

As I said at the outset, I expect no one to be convinced by this paper. I only hope some will be induced to try the treatment. Begin with a case so bad you believe it has no chance for life, one that is delirious, husky, restless, gasping for breath, respirations shallow and rapid, temperature high, the poisoning so profound that delirium alternates with that dull, sodden mental state so well named "dopey." I only ask you to observe whether or not every superficial symptom is improved by it. Note, first of all, whether patients are quieted, are of better color, take their food better, have cleaner tongues, better assimilation. If they show no improvement when entirely surrounded with cold streaming fresh air, then I have nothing to say. Do not take another's word for it, try it.

SUMMARY.

1. The cases most favorably affected by open-air treatment are those with severe poisoning, with delirium, partial cyanosis or deep stupor ("dopey"). In my experience all cases fare better in cool fresh air. Open air may be secured by screening off the bed and a portion of the room next the window.

2. In my experience no cases of pneumonia have been injured, and a few have been much aided, possibly saved, by the cold fresh air treatment.

3. If pneumonia, due to an infecting agent, is benefited by the treatment, one may be easily led to try it for other infectious diseases. As a matter of fact, I have tried it for many others, including typhoid with severe bronchitis, whooping cough with bronchitis and convulsions, with excellent results. It seems to me the ideal treatment for all forms of "septic fever."

4. The only regulaton is to make the patients comfortable, keeping their feet warm especially. The ears, nose and hands may get cold without harm.

Finally, the Presbyterian Hospital is so convinced of the permanent usefulness of open-air treatment for all infectious fevers that it has built a roof garden for the children's ward and is about to build on the main roof of the medical side of the hospital a colossal roof garden. One-half of this has a "horse shed" structure, the shed open to the south, and a liberal space in front is enclosed, like a paddock, for a roof garden. In bad weather the beds of the fever patients are to be wheeled back into the depths of the shed. In good weather they will be advanced more and more to the opening or even out into the garden. They will remain there, night and day, so long as their fever is high. It is to be an open-air ward.

DISCUSSION.

Dr. John Lovett Morse, Boston, said he claimed to be a humble disciple of Dr. Northrup in the matter of fresh air. In the last two years he had been treating all his pneumonia patients both in private and hospital practice, with the windows wide open without regard to the temperature of the air outside. As far as possible he kept them by the window. In no case had he seen any harm done, and in many cases there was a great deal of benefit. He had not been able, at any rate in hospital practice, to get the percentage of recoveries from pneumonia which Dr. Northrup gave.

Dr. Isaac A. Abt, Chicago, said he did not exactly agree with Dr. Northrup's view, but he believed that Dr. Northrup's position in regard to the treatment of pneumonia among children will bear valuable fruit. It will awaken the entire profession to the importance of securing fresh air and well ventilated rooms for the little patients ill with pneumonia. Dr. Abt would hesitate to expose pneumonia patients to the extreme cold of the winter until further proof is brought forth. So little is known about the physiology of the heat regulating apparatus of the infant. It has been taught that premature and delicate infants can only survive if they are kept warm. Surgeons declare that children stand operations much better if the operating table is kept warm. Now, it is proposed, to go to the other extreme and treat our pneumonia patients out-of-doors in the extreme cold weather. It will require a larger experience, careful clinical study of the cases thus treated and some physiologic observations before this plan of treatment should be commended for universal adoption.

Dr. Edwin E. Graham, Philadelphia, narrated his experience with this treatment during the first three months of this year in Philadelphia. He went on duty in the Children's Hospital and in the Philadelphia Hospital and found possibly forty or fifty children under the age of one year. Nearly all were foundlings and most of them were feeding. The treatment of these cases in his hands was most unsatisfactory. He first started three years ago to put them on the fire-escapes. The cribs would be more or less covered with towels and the babies bundled in blankets and it did them good. Two years ago he dispensed with the towels over the cribs, simply rolling them in the blankets. This year he obtained the coöperation of the resident physicians and nurses, and from almost the very first day these children, bundled up in blankets as if they were bags of meal, with nothing but their heads outside, and these covered with very warm caps, were taken out to the porch, which was covered with glass and open at the front and sides. The results have been surprising. Those cases which had been almost worrying the life out of the resident physician and giving him much anxiety during previous years almost invariably began to improve. The records cover a great many children, some of them only for a period of a few weeks and others for a period of three months. Unless the children were ill with some condition like tuberculosis in which improvement was almost impossible they stopped losing weight and gradually gained. The results of these three months have convinced him that even in hospital work where formerly he was not able to get satisfactory results these results have been quite possible.

Dr. C. F. Wahrer, Fort Madison, Iowa, said that less than ten years ago it was advised to treat pneumonia cases by opening all the windows and letting the cold air blow on them. None of the men who have advocated this treatment have given the rationale of their procedure. Dr. Northrup says "Try it." This is somewhat in the nature of empiricism. In view of the fact that we all consider pneumonia an entirely infectious disease, Dr. Wahrer would like to know what is the *modus operandi* on the bacillus of pneumonia. Dr. Northrup's method is the very opposite of the popular method so long followed by the profession; namely, to keep the patient warm, use of warm poultices, affusions and other warm and even hot applications still recommended by many of our most recent text-books. On the whole it is rather a sad comment on the treatment of pneumonia, to flounder from some of the most active opposite methods; to the most nihilistic *laissez-faire* or the let-the-patient-get-well-system.

Dr. W. C. Brewer, Columbus, Miss., approved of Dr. Northrup's paper, having treated a number of cases of pneumonia by the open-air method and finds it gives excellent results. In the last five years he had not kept as careful statistics as he might, but he believes the treatment is a good one for pneumonia. The worst thing in pneumonia, especially in children, is over medication; the best thing is plenty of fresh air.

Dr. Abt seems to think that there is some great difference in the temperature of the air. Dr. Brewer thinks that the temperature of the air is of great consequence; what is desired in these cases is oxygen. In his cases the heart and kid-

neys seemed to do their work with less strain or effort, depression after the crisis was not so marked, and the recovery was more rapid.

Dr. F. S. Churchill, Chicago, said he did not see how any one who has ever tried the method can doubt its value, he having treated pneumonia in this way for several years. A patient is well exposed to the fresh air and the effect is very refreshing and beneficial. If any one would but give it a trial for a few of his cases he would continue to use it and expose his patients to plenty of good fresh air.

Dr. H. McClanahan, Omaha, Neb., said that the paper will be of great and decided benefit to all of us in giving us more courage in insisting on thorough ventilation of our patients' rooms. He had always been confronted with that fear of mothers that fresh air might be injurious to a sick child. For a number of years he adopted the treatment in pneumonia of having two rooms, if necessary utilizing the dining room, to secure entire change of air, and he has so taught his classes. He would like to know how Dr. Northrup keeps his patients warm with the temperature approaching zero and what instructions he gives the nurse about observing the body temperature. In view of Dr. Northrup's statement that the hands and ears might become cold, Dr. McClanahan wondered whether driving of the blood from the large surface capillaries might not be injurious. He would like to know more definitely of the technic of the method.

Dr. George N. Acker, Washington, D. C., said that one point overlooked was in reference to the advisability of leaving off the pneumonia jackets, which he thinks do more harm than good. He believes also that too much medicine is given in pneumonia. Strychnia at the end of the disease is indicated.

Dr. D. E. English, Mill Burn, N. J. asked Dr. Northrup whether he gets good nursing under these low temperatures, whether he can get nurses to give proper care to the children when they are cold themselves.

Dr. H. C. Worthington, Oak Park, Ill., said he had saved several lives by the treatment and with profound gratitude that he accepted Dr. Northrup's views.

Dr. R. B. Gilbert, Louisville, Ky., asked Dr. Northrup whether he gives any other treatment. Is nothing else done except to put the patients out of doors? Dr. Gilbert believes in the oxygen treatment.

Dr. B. B. Simms, Talladega, Ala., said he believed in the treatment. Last winter he had a child two years of age with bronchopneumonia in which the crisis appeared in about five days. The child did not improve after the crisis and seemed to have some chronic trouble, but not tuberculosis. It went home but did not improve. After awhile he felt satisfied that it would die if the mother did not allow him to put it out on the porch. Consent was given and improvement was noticed in the first twenty-four hours. Some six years ago he noticed Dr. Seibert treating cases of pneumonia in children in a carriage out on the sidewalk.

Dr. W. P. Northrup, New York City, said that by explaining the treatment its acceptance is made possible. He makes but limited use of drugs in pneumonia, not having much use for them since he adopted this treatment. In regard to nursing, he insists that the baby's feet must be kept warm. Very great care is to be taken of the digestive tract in order to prevent flatus which would make breathing difficult. He can not explain how the treatment gives the good results. The cold fresh air acts in a certain beneficial way. Some say it is oxygen and not the cold. But the cold is important; the colder the day, the better the patients do. It does something toward quieting them. A German physician has adopted this plan and has published his views that are quite in accord with those of Dr. Northrup and quite as radical. The plan is not anybody's method; it is a hygienic method. He does not think it is quite the element of oxygen alone that does the good; there is something about the coldness and freshness of the air that braces people up. In the spring, a little change in the temperature and moisture causes people to say they have the "Spring fever;" the wind changes and they are all braced up. About the traditions too much had better not be said, for some have been pretty bad. A child entirely outdoors is absolutely safe. Dr. Northrup has never known one threatening thing to happen to such a child, well wrapped up. They should be made comfortable and hot water bottles, if necessary, put to their feet. If the air comes only on the face it is not so favorable, but if the child is wholly bathed in the cold air there is no danger. He could give many instances of benefit. In one child with a temperature of 106, and dopey, improvement promptly followed removal to the air. From the outdoor treatment of tuberculosis it has been learned that infectious fevers with temperature should have the benefit of the open air. If the time is ripe to try the plan, try it. Do not call it anybody's method. Fresh air was not discovered to-day, yesterday or the day before. The method is radical, but it works.

ACUTE NON-SUPPURATIVE ENCEPHALITIS IN CHILDREN.*

ISAAC A. ABT, M.D.
CHICAGO.

Acute non-suppurative encephalitis is neither a rare nor new disease among children. Striking cases, however, are of interest. Attention was first called to this class of cases by Strümpell[1] in 1884:

> Cerebral palsies in children depend on inflammation of the gray substance of the motor cortex. There is, therefore, an acute polioencephalitis analogous to acute poliomyelitis. Both depend on the same infection which sometimes becomes localized in the brain, sometimes in the cord.

Strümpell's publication aroused much interest and subsequent investigations were made by Bernhardt, Wollenberg, Krast and Möbius in Germany; Marie in France; Ross, Abercrombie, Gowers and Ashby in England; Sachs, Peterson and Osler in the United States.

With the evolution of the subject, it became evident that Strümpell was not entirely correct in the assumption that cerebral palsy in children was due to a single process, but several pathologic changes, such as cerebral hemorrhage, embolism, and thrombosis, with sclerosis, cyst formation or porencephaly. Hence polioencephalitis was responsible for the cerebral palsies in only a proportion of the cases. Sachs states that the disease, polioencephalitis, is open to question. He doubts the existence of such a morbid entity. During the last few years, however, many contributions have been made to the subject, and there remains no doubt that Strumpell's position was essentially correct, that acute encephalitis is responsible for a proportion of the cases of hemiplegia in young life, Freud[2] estimates that one-third of all the cases of hemiplegia in children are infectious in origin.

In looking over a large number of histories of this disease one cannot fail to be impressed with the fact that it has several clinical types. Batten[3] believes that acute poliomyelitis and encephalitis are often associated and suggests as a classification: 1. Acute polioencephalitis superior, including those cases of paralysis in which the frontal, motor and occipital regions of the cortex are affected. 2. Acute polioencephalitis inferior, in which the neuclei of the cranial nerves are involved. 3. Acute poliomyelitis anterior, in which the gray matter of the anterior horns below the medulla is affected. It is thought that the cord and the brain may be affected at the same time, thus constituting a polioencephalo-

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* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Strümpell: "Lehrbuch für Speciellen Pathologies und Therapie," 1893.
2. Freud: "Infantile Cerebrale Lämungen," 1897.
3. Batten: The Lancet, Dec. 20, 1902.

myelitis. Aldrich[4] says that there is occasionally a disseminated encephalomyelitis complicating smallpox.

Two cases constitute the subject of this clinical report:

Case 1.—E. V., female child, aged 5, came under my observation July 31, 1905. She was born under normal circumstances; was breast-fed, progressed favorably during her infancy and never had any severe illness.

Present Illness.—The mother had taken the family away for a visit in Ohio. On July 25 the child fell ill with a severe headache. The mother thought the child was feverish. The pain in the head, which at first was slight, became more and more severe. During the first night of the illness the mother was of the opinion that the headache was intense. The child cried piteously; the mother carried her in her arms all night in an endeavor to quiet her. On the following day there was less restlessness and she did not speak to those around her. During the night of the second day, the mother states that the child's head was thrown back and the arms were stiffened at frequent intervals. It was noticed that these rigidities of the neck and extremities seemed painful to the child. On the next day, Thursday, she became still more quiet, although there were paroxysms of pain during which she cried out loud. The father, who had come to take charge of her, was alarmed by the condition and concluded to bring her to Chicago, arriving July 31. The child was at once taken to the hospital.

Examination.—The child was semi-conscious; too stuporous to speak or take notice of anything. Temperature was 102.6; pulse, 138; respirations, 30. Examination of the skull and scalp was negative. The pupils were equal and reacted both to light and distance; there was no paresis of the lids; a slight nystagmus, but no strabismus, was noted. The mouth and pharynx were negative. There was slight facial asymmetry due to paresis of the right side. The examination of the heart and lungs proved negative. The muscles of the upper extremities were tense and somewhat retracted. Palpation of the abdomen elicited some rigidity of the muscles, with a slight retraction of the abdominal wall. The tendon reflexes were all increased, yet more markedly on the right side. The Babinski toe sign was present, also more markedly on the right side. The Kernig sign was not present. The child was having involuntary evacuations from the bowel and bladder. The examination of the urine was negative. Blood examination showed a moderate leucocytosis.

Clinical History.—There was not much change in her condition for a number of days after her admission into the hospital. At times, particularly at night, she was slightly restless, though for the most part she lay in a stupor. She took a moderate amount of food. There were occasional twitchings in the right arm and leg, though voluntary movements were not noted. The pulse was sometimes irregular. The temperature varied from 99 in the morning to 103 in the evening and followed no regular type. After she had been in the hospital about a week the temperature showed a tendency to fall, and on the ninth day was practically normal. At this time she began to cry out, but did not appear brighter.

On August 14 (twentieth day), however, she seemed to recognize her baby brother. On August 18 (twenty-fourth day) her mind was clearer and she took considerable food. She cried out at times, seemed to recognize those who entered the room, but did not speak. On August 19 (twenty-fifth day) for the first time she moved her left leg, but neither her head nor hands. She recognized her mother by signs, but did not speak. On August 22 (twenty-eighth day) she gave evidence of general improvement. She smiled and nodded to those who came into her room. Her pulse was slow, but of good quality. On August 23 (twenty-ninth day) movement was noted in her left foot and leg. She seemed greatly pleased about this and laughed out loud.

Recent History.—On August 26 (thirty-first day) she was removed from the hospital to her home. She seemed very happy, moved her left arm and leg, relished her food, but was still unable to speak. On August 31 (thirty-sixth day) for the first time movement appeared in the fingers of her right hand. During this interval she used her left arm and leg with ease, participated somewhat with her brother and sister in their play, and they endeavored to teach her the deaf and dumb language, in which they partly succeeded. She enjoyed this idea and made finger signs in return, thereby indicating her wants. The mother states that on September 5 (forty-first day) she tried to talk, but describes the attempt made as pitiful. A few days later she ventured the remark, "Take me." It was a very great effort. Improvement was slow. The use of her left arm and leg returned only after a protracted time. The paresis of the right side of the face improved only slightly.

Her speech improved gradually, though even now she talks with some difficulty. She hesitates and stammers, and her speaking vocabulary is not large. The upper extremity of the right side is used with some difficulty. There is some contracture in the hands and fingers. The elbow joints are movable. She is awkward in the use of the arm and hand. The patellar reflex of the right side is more active than the left. Ankle clonus is present. There is no considerable atrophy of the right leg or arm; the foot hangs in equino-varus position; the gait is decidedly of a hemiplegic type. She is irritable and extremely shy in the presence of strangers. Sensation everywhere is normal.

The points in this case may be summed up briefly as follows: A previously healthy child was taken suddenly ill with headache, fever and increasing unconsciousness, a condition which continued for about ten days, when she awoke from the stupor and was found to be suffering from a generalized paralysis. The use of the left side recovered itself in a few days. She was and is now suffering from a complete right-sided hemiplegia. Her intelligence does not seem to have suffered to any marked degree. As I saw the child on the first day, it impressed me much as would a case of tuberculous meningitis, and I am free to confess that this impression was retained throughout the first days of the illness. Respecting the wishes of the father, I did not make a lumbar puncture. It was only when the child aroused somewhat from the stupor that we began to suspect the true nature of the disease, which suspicion grew to a conviction with the appearance of the hemiplegia.

Case 2.—Male child, aged 5; was without serious illness until the present attack.

Family History.—The maternal grandfather died at the age of 66 years from heat prostration. The maternal grandmother met with an accidental death at the age of 31. The paternal grandparents lived to be very old. The little patient's father lost two sisters from tuberculosis. The father himself has always been well. In appearance the mother is a very large, robust woman. She says she never had any serious illness, although all her life she lacked in endurance.

Present Illness.—The boy became ill on the first day of September, 1905. At the dinner table he did not seem himself. He appeared exhausted, his face became pale, he was listless, and had to be carried to bed. Although this was unusual, nevertheless the mother attributed it to hard play. The next morning he vomited several times, but did not create the impression of being seriously ill. The pulse was 120 and the temperature 101 F. He was drowsy, though he could be readily aroused. The mother thought he did not act differently from any child suffering from fever. On this day the parents were invited to a friend's farm in the country. Notwithstanding the little fellow's indisposition, they took him along. He continued to be drowsy, refused food for the most part, and vomited occasionally. This was the third day of his illness. In the evening the boy did not seem any better and the parents returned with him to the city. He acted excessively nervous, was very irritable and fretful, and it was noticed by the mother that the left side of the face was slightly drawn and a slight tremor appeared in the right hand. His condition was not considered worse on the night of arrival home,

4. C. T. Aldrich: Am. Jour. Med. Sciences, February 1904.

since he slept nearly all night. On Monday at 5 o'clock p. m. he seemed decidedly worse. His temperature was 104; his pulse very rapid. He lay in bed in dorsal position, unconscious, though he gave an occasional cry. There were involuntary passages from the bowels and the bladder.

Examination.—I saw him for the first time on the fourth day of his illness, and noted a well-developed, well-nourished boy in a state of unconsciousness and with considerable fever, varying from 102 to 104. The examination of the head and scalp was negative. Inspection of the ears by a specialist showed them to be normal. The pupils were regular, reacted readily to light and accommodation. The examination of the eye grounds proved negative. The left half of the face was drawn slightly. The tendon reflexes of the arm and leg on the right side were somewhat more brisk than those on the left. The urine was excessively acid and showed slight traces of albumin.

Clinical History.—On Tuesday (the fifth day) he was unable to speak, but was stuporous. He vomited occasionally and threw himself about. At this time it was observed that he had a paresis on the left side of the face, and it was suspected that the right arm and leg were paralyzed. He lay in this condition of stupor until Thursday (the seventh day), when he awakened for an hour. On Friday he became brighter, taking notice of some figures on the bedspread and calling attention to them. From this day on he was without fever. His recovery was gradual. He shortly regained his speech, and in three weeks more was able to walk. The mother called attention to the fact that although improved and up and about, he nevertheless remained extremely nervous. He became greatly excited in the presence of a company of people or when taken downtown among large crowds. The slightest physical effort seemed to prostrate him.

Present Condition.—There is now a very evident paralysis of the left half of the face. If he smiles or attempts to whistle, or even to speak, left facial paresis is unmistakable. The hand and arm on the right side have recovered to a very considerable degree. There is a slight flexion of the fingers, though he uses his hand with great facility. There is some limp when he walks, though there seems to be very little spasticity of the right leg. He sometimes complains of a pain in the right foot and hand, probably the so-called post-hemiplegic pain. He is a bright little fellow, quick and nervous in his actions, talks about almost every subject in a very intelligent way. He makes the impression of being mentally normal.

This case presented difficulties in diagnosis, such as confront one in the incipient stages of this disease. During the first forty-eight hours, one would have thought of some acute infectious process; for example, an obscure pneumonia or almost any infectious disease in process of development. The case is of additional interest in that it shows the lesion located in the pons, and belonging to that variety already spoken of as polioencephalitis inferior.

ETIOLOGY.

The cause of acute non-suppurative encephalitis may be summed up briefly in the words infection and intoxication. Acute alcoholism possibly plays a rôle in adults and older children. In one of Wernicke's cases, poisoning with sulphuric acid was suspected. In other cases, nicotine has been thought of as a factor. The infective source is the most frequent of all in the encephalitis of children. It is well known that an encephalitis may develop during the course of a cerebro-spinal meningitis. In nearly a third of all the cases of hemiplegia in young life, it has followed one of the acute infectious diseases, occuring either at the height, or defervesence of the disease.[5] There is probably no infectious disease known which has not been reported at one time or another as having been followed by cerebral hemiplegia.

Measles and scarlet fever, according to Freud,[5] head the list. Next in order come smallpox, German measles, whooping-cough, diphtheria, croup, follicular tonsillitis, morbus maculosis, dysentery, pneumonia, typhoid fever, mumps, intermittent fever, chorea with endocarditis; even vaccination is said to have caused hemiplegia in several cases. Perhaps the best known and the best studied of all the various infections producing encephalitis is influenza. The question is not altogether settled whether the influenza bacillus itself or its toxin produces the cerebral inflammation.

Pfuhl[6] succeeded in finding influenza bacilli in the central nervous system of patients dying of a severe nervous form of influenza. Nauwerck[6] succeeded in finding the Pfeiffer bacillus in a case of influenzal encephalitis in the brain and in the ventricles. Cantani[7] has injected cultures of influenza bacillus beneath the dura of rabbits, and succeeded in producing meningitis and encephalitis. He found, too, that the same result could be produced by the injection of dead cultures as well as living cultures. The inference, therefore, is, that encephalitis is due to the action of a toxin produced by the bacilli on the brain substance. There is a large number of cases in which encephalitis occurs as a primary infection. In the two cases which I have cited, evidence of any pre-existing infectious disease is absolutely lacking.

All authors mention trauma, such as a blow on the head or a fall, as having some direct remote relation to disease. Heubner[8] finds that it is much more frequent during the first and third years of life, though it does occur at almost any age during childhood. In some of the cases, syphilis is a predisposing, if not an exciting cause, by giving rise to an endarteritis, or some other lesion of syphilitic degeneration, which might become secondarily infected. An ulcerative endocarditis may cause an embolic process infectious in character.

PATHOLOGIC ANATOMY AND HISTOLOGY.

Any portion of the brain may be infected, though, as it has already been stated, the cortex, or encephalitis superior (Strümpell's variety), the basal ganglia and the region of the medulla, or encephalitis inferior (Wernicke's variety) are selected areas. The cerebellum is seldom affected, although Batten[5] recently reports a case typical in its clinical findings and verified by autopsy. The disease is usually focal in character, though the foci are multiple and disseminated. The most striking point in examining an area of inflammation is the change of color apparent in the gray substance. It is grayish-red or violet or brownish-red, or the white substance is streaked with red. Sometimes there is a uniform discoloration, or the brain substance appears streaked or spotted. On section of the brain red or yellow points may be seen which have been compared to flea bites by older authors and described as being surrounded by zones of swelling and softening. When the lesion is in the cortex, the neighboring pia is usually injected and may be adherent.

The results of acute encephalitis may terminate in local necrosis or formation of scar tissue. Glia cells are proliferated and connective tissue is formed. This results in a local induration, referred to by the older writers as brain sclerosis. The process may be very extensive and lead to atrophy of a part or even an entire cerebral hemisphere. In other organs, lesions are some-

5. Pfuhl: Deutsch. med. Wochschr. No. 6, 1896; also Deutsch. med. Wochschr. No. 29, 1895; Berlin. klin. Wochschr. No. 39, 1892.
6. Nauwerck: Deutsch. med. Wochschr. No. 28, 1895.
7. Cantani.
8. Heubner: "Kinderheilkunde," 1906.

times found as the result of the general infection. The spleen is at times enlarged; hemorrhages occur into intestines and mesentery, while a parenchymatous degeneration of myocardium and acute nephritis may be present.

SYMPTOMATOLOGY.

Strümpell[1] speaks of acute encephalitis as occurring in children between 1 and 4. The disease is marked by sudden onset, with feeling of illness and fever. Shortly nausea and vomiting or general cerebral disturbance in the form of coma and convulsions may occur. This condition may last one or two days or one to three weeks. The children may recover from the disease gradually, but paralysis in some form will remain.

After the paralysis has existed a while, examination usually shows that both extremities of one side are affected, the arm more than the leg. There are no sensory disturbances. The growth is, to a certain extent, retarded. The muscles are somewhat atrophied. There is no reaction of degeneration, but almost always more or less muscular contraction. Variations from this course sometimes occur. Children occasionally die suddenly before the diagnosis can be positively made. Chronic forms sometimes occur. In these cases the initial symptoms may last one or two months. Convulsions occur frequently, resulting from the new inflammatory areas. Strümpell[1] believes this disease is analogous to acute poliomyelitis; the initial symptoms are so similar that in a given case it might be difficult to decide whether a cerebral or spinal paralysis would ensue. In another group of cases, which belongs more particularly to the inferior polioencephalitis group, the acute infectious diseases very often precede the onset of the encephalitis. One of Leyden's cases of this type is of interest:

A 15-year-old boy fell suddenly ill with headache, nausea and dizziness, and on the third day these symptoms were augmented by fever, vomiting, difficulty in swallowing; the symptoms progressed, and on the sixth day of his illness, in addition to the headache and dizziness, he developed rigidity of the neck, ataxia, paralysis of both facial nerves, paralysis of the hypoglossal, of the soft palate and vocal cords. He also had a mild fever. His pulse was slow; there was no involvement of the eye muscles at first; later on he showed paralysis of the abducens. He died on the eleventh day of his sickness, and the autopsy showed a pneumonia with an encephalitis in the region of the medulla.

Oppenheim[9] reported another case of encephalitis located in the pons:

A girl, aged 12, suffered from a swollen face, with pain on the left side. She also suffered from headache. Very soon she became mentally dull. There was no fever; there were no changes in the eye grounds. Some time later, however, the left facial nerve became entirely paralyzed, with a hemiparesis and incoördination of both arms, though most marked in the left arm. The tendon reflexes became increased; the soft palate was paretic; articulation was difficult. All of these symptoms pointed to a focal lesion involving the pons in the region of the left facial nerve, and extending so as to involve the sensory and left pyramidal tracts.

In the majority of cases, the disease begins in the midst of perfect health, like an acute infection, and in the manner already referred to. Convulsions may occur, of the Jacksonian type, or may be general. The vomiting may be persistent, and the child remain in a febrile, stuporous or comatose condition for several days. The temperature is variable; the coma rarely complete. At first sight, one is inclined to think of meningitis or perhaps some other acute infectious disease which is in process of development, with decided nervous symptoms; but in a few days the fever declines; the child becomes more quiet, and thus, on the fourth or fifth or perhaps the tenth day of the disease, the paralysis becomes evident. There may be an arm involved, a complete hemiplegia, or a crossed paralysis due to a lesion in the pons, as has already been referred to.

At the very onset the reflexes may be diminished, and a generalized paralysis of all of the extremities seems to be present. In several days, however, the unaffected extremities begin to regain their motor function, and later on the child begins to move to some extent the affected arm or leg. At this time the reflexes on the involved side are usually increased, and the Babinski toe sign becomes manifest.

In addition to the nervous symptoms already enumerated, symptoms indicating vasomotor disturbances are not infrequent; for example, the nutrition of the skin is affected. It is likely to appear blue on account of capillary and venous stasis in the hand and foot of the affected side. Such an extremity is cyanotic; sometimes slightly edematous, and not infrequently cooler than the limb of the other side. The skin is dry; the sweat glands less active on the unaffected side. Very often, and particularly in the milder cases, the intellect of the child remains practically unimpaired. At other times where the lesion is extensive, more or less permanent mental deficiency supervenes even to the production of idiocy. Such a disturbance of motor speech may persist in varying degree. In many cases epileptic convulsions develop from which recovery is impossible.

Schultze[8] first called attention to the fact that deaf-mutism may result from acute encephalitis. He cites the following case:

A 2½-year-old child, healthy, received a blow on the head. The same evening it cried for several hours, and on the following night had convulsions with slight fever. For two days thereafter it was stupid, restless and refused food. On the fourth day it showed some improvement. Ten days after the beginning of the disease it was found that the child was deaf; also that it had slight strabismus; no other paralysis existed. The deafness continued although the middle ear was normal.

In some of the milder cases the paralytic symptoms may entirely disappear, and Medin reports a recovery without permanent paralysis. Comby also reports a case in a 7-year-old girl cured without a trace of paralysis.

Complete recoveries have been reported after slight attacks, usually slight paralysis remaining. The terminal of the cases may be summarized thus:

1. A small proportion of the cases do not survive, death occurring in the second or third week or as early as the first day.

2. If the encephalitis occurs during acute infectious disease, death may result from cerebral conditions or from the original disease.

3. Some cases improve within a few days, without any signs of disease after six or eight weeks. There is always a liability to hemiparesis of one side of the body or to epilepsy.

4. The majority of cases with initial flaccidity give rise later to the spastic type of hemiplegia.

The diagnosis during the acute stage is nearly always difficult. One is liable to think of an acute infectious disease, on the one hand, or a meningitis, on the other. The diagnosis may be confused with that of a tubercu-

9. Oppenheim: "Enceph. Specielle Pathologie und Therapie," Nothnagel, 1897.

lous meningitis. Spinal puncture in these cases is of but little assistance. If hemiplegia exists or cranial nerve paralysis, with returning consciousness, the diagnosis is rendered comparatively easy.

In short, if in the midst of absolute health, or in connection with an acute febrile disease, the child during the first years of life is seized with recurring convulsions, or vomiting, if a hemiplegia results, or if, later, psychic disturbances, contractures, postparalytic hemichorea, epilepsy or idiocy develop, the diagnosis of encephalitis can be made with reasonable certainty.

DISCUSSION.

Dr. J. Ross Snyder, Birmingham, Ala., said that he was much impressed with the closeness of Dr. Abt's clinical observations in the cases of acute encephalitis presented because the differentiation of the disease depends more on the closer findings than on the large and glaring symptoms.

Dr. William J. Butler, Chicago, said that few subjects in pediatrics admit of more speculation as to their etiology than the acute cerebral palsies of early childhood. This is chiefly due to the fact that these patients seldom die in the acute stage. As a consequence pathologic information is rather scant and the cases usually come to postmortem months or years after the actual disease when secondary changes have occurred which render a determination of the primary condition impossible. This has given rise to the hypothesis which, he believed, was originated by Benedict, and reviewed by Strümpell (who employed the term polioencephalitis), of acute encephalitis, being responsible for a large number of the spastic hemiplegias of childhood. The acute cases that have come to postmortem early are usually dependent on vascular changes, whether it is a thrombus, embolism or hemorrhage. In the vast number that fail to come to postmortem the assumption of an encephalitis frequently prevails. In recent years some cases at postmortem have disclosed changes of an encephalitis similar to those which occur in the adult as described by Oppenheim and others. The cases are interesting from more than one standpoint; for instance, Strümpell first spoke of the onset of encephalitis as being characterized by convulsions and coma. These were not present in one of the cases mentioned by Dr. Abt. These views have been modified also by Strümpell to cover such cases; that is, the onset may be gradual and convulsions may not play a part in the clinical picture. Dr. Abt's first case is of interest, because of the meningeal symptoms present, and because of the generalized spasticity that existed and which leaves one in doubt as to whether the process did not extend beyond the brain as might occur in an isolated case of cerebrospinal meningitis in which there is often a cerebritis as well as a meningitis.

Dr. George N. Acker, Washington, said that the condition at times is very hard to diagnose, and recalled a case during an epidemic of grippe in which the child had bronchitis and was in a state of coma in which it remained five days. The muscles of the neck were rigid and all four extremities were paralyzed. The diagnosis was poliomyelitis anterior with acute encephalitis. He has seen these cases in influenza and it is only occasionally that they recover without lesion. He has also seen cases of hemiplegia with typhoid fever with perfect recovery. It is very difficult to make a diagnosis in the first stages.

Dr. J. H. W. Rhein, Philadelphia, said that in the last two years he had had an opportunity to study microscopically the brains in several cases of encephalitis, one of which was acute. In a case of scarlet fever which displayed very few meningeal symptoms clinically the brain showed microscopically undoubted, though not marked, evidence of encephalitis. There were a few hemorrhages in the pia which was also the seat of a slight round-cell infiltration. In the cortex there was some perivascular dilation as well. In a second case an infant developed during the course of whooping-cough gradual weakness of the legs and arms associated with progressive spasticity. Finally the child became idiotic and exhibited all the symptoms of spastic diplegia. Toward the end of about two and a half years convulsions appeared and the child died during one of the convulsion seizures. A study of the brain microscopically revealed the presence of a pronounced perivascular distension in the cortex, especially in the paracentral region. The perivascular spaces were four or five times as big as was the vessel itself and in many instances the perivascular spaces were filled partially or entirely with round cells. This process was widespread throughout the cortex and there is no doubt that a number of fibers in the cortex must have been compressed and destroyed. At all events there was a perceptible degeneration in both lateral columns of the cortex which is best explained in this way. He has studied the question of encephalitis extensively from a pathologic standpoint, not only in children but in adults. In recent papers he has described a small area of softening in the cortex due to a necrotic process occurring as a result of disease of the vessels from various causes and has also referred to the presence of acute inflammation in the cortex. These conditions are most frequently the outcome of tertiary syphilis and are often only seen after careful and extensive study of the brain microscopically.

Dr. H. Lowenburg, Philadelphia, referred to acute infectious diseases and especially measles as causes of hemiplegia. He has seen a case of acute hemiplegia in a child in which convulsions occurred on the second day of the eruption and lasted forty-eight hours. After the convulsions the child had complete hemiplegia of the left side. The case was regarded as one of hemorrhage somewhere above the decussation of the seventh nerve, most probably in the cortex. The hemiplegia of the face, arm and leg was on the same side. He asked whether in Dr. Abt's case the reactions of degeneration were taken. In these cases, after their recovery from the acute symptoms, he imagined that the absence or the presence of the reactions of degeneration would help to differentiate the resultant palsy from acute poliomyelitis.

Dr. I. A. Abt, Chicago, said that cases of acute encephalitis vary in intensity. Some are rapidly fatal; some give rise to severe and permanent paralyses, and in some marked improvement occurs and only slight paralysis persists. Some have epileptic seizures, and in not a few the mentality suffers, the patients becoming feeble-minded. So far as the electric reactions are concerned, early in the course of the disease they would have little diagnostic significance. Later, the reaction would be proportionate to the amount of descending nerve degeneration.

Clinical Notes

DANGER FROM THE CARELESS USE OF THE ALKALOID OF THE SUPRARENAL GLAND.

BARTON H. POTTS, M.D.
Aurist and Laryngologist to the German Hospital.
PHILADELPHIA.

I feel that it is time to speak a word of caution and warning in regard to the indiscriminate and careless use of a preparation that is being widely advertised and prescribed as harmless, viz., the alkaloid of the suprarenal gland. In its proper field and under careful observation, this preparation is very valuable and of great assistance to the operator. But I feel that the present reckless use will result in harm and cast opprobrium on a really valuable remedy. Several cases that have come under my care have brought this sharply to my notice.

DANGER TO THE MUCOUS MEMBRANE.

Application of this remedy to the mucous membrane causes an intense shrinking in the caliber of the blood vessels, and when this effect wears away there is a dilatation to and beyond normal. The later effect of the preparation is to raise the blood pressure very decidedly, and when the vessels dilate this necessarily causes a marked degree of engorgement of the tissues. Every careful observer has doubtless noticed this in his work. It is further

proved by the greater frequency of secondary hemorrhages following its use in operations.

This relaxation of the vessel walls must be overcome, and Nature is generally able to rectify the condition without trouble. But when a tissue, for any reason, is relaxed time after time it loses its power of returning to normal and in the case of the vessel walls this means an increased blood supply. When this process is repeated, times without number almost, it must follow that a condition of persistent turgescence will present itself, and this is the condition I have seen in several of my patients. These patients were all sufferers from rose cold or hay fever, but their later condition is worse than their first.

Case 1.—J. C., a business man, aged 39, of good habits and good health except for his periodic attacks, was advised by a lay friend to use one of the well known preparations of the suprarenal gland and supplied himself with the remedy and an atomizer in the summer of 1905. He used it several times a day during his attack.

When the hay fever subsided he noticed that there was a fullness in his nose that did not disappear, but on the contrary became more marked. He was treated by his physician for a time without relief and then sought the aid of a rhinologist. The condition refused to yield to any form of treatment and symptoms of Eustachian congestion supervening, it became necessary to remove portions of both middle turbinates. After a long course of treatment he went to his home improved, but bearing traces of the condition with him.

Case 2.—M. D., a girl, aged 18, under the advice of her physician used one of the preparations several times a day for an attack of rose cold. Her symptoms were much like those of Case 1, but yielded more readily to treatment. No operative interference was necessary; but her mucous membrane is much relaxed and engorged and it is doubtful if she has yet heard the last of it.

Case 3.—H. R., one of my patients, was treated for rose cold during the past summer and the same condition presented itself. Fortunately the developing turgescence was recognized and the treatment changed, but not early enough to prevent some damage, as a trace of the swelling is still present.

Preparations of this character are being used at present without any supervision, the patient being advised to use them frequently, as there is no likelihood of harm resulting.

I feel that this frequent use will result, in many instances, in a condition that may leave its trace always and that the practice is to be strongly condemned. As already said, the remedy is a valuable one in its proper field, but it should be used with care and under observation.

LATENT TUBERCULOSIS IN CHILDREN.

PATRICK MOLONEY, L.R.C.P., L.R.C.S. (Edin.).
BEAUFORT WEST, CAPE COLONY, AFRICA.

The editorial in The Journal, May 19, 1906, on "Latent Tuberculosis in Children" has induced me to submit notes (from memory) of a case of tuberculous meningitis appearing after recovery from measles.

Personal and Family History.—John T., aged 3, illegitimate. Family history showed one case of phthisis and one of tuberculous meningitis, uncle and aunt respectively.

Clinical History.—Patient had measles early in January, 1906. After the rash disappeared the temperature did not fall to normal, but varied from 100 to 101. There were no complications that could be discovered to account for this. Eventually the child was taken to the country. On his return he was no better, rather thinner. His father stated that at night the child was very restless and complained of headache, and very great pain and tenderness in the epigastrium. The child was extremely irritable, drowsy, and screamed on being touched, so that examination was impossible. Vomiting was not present; pulse, 80, not irregular; respiration normal; temperature, 101; no squint; abdomen full; tongue clean. Later the child became comatose and the classical symptoms of the disease developed; intermittent pulse, vomiting, twitching of upper extremities, Cheyne-Stokes respiration, etc. An ophthalmoscopic examination showed blurring edges of disc and white patches on lower temporal artery. These patches had no pigment edge.

Death occurred fourteen days after arrival from country, so that since onset of restlessness at night and headache, disease terminated on twenty-second day.

The interesting features in this case were the presence of the intense epigastric tenderness and pain. As has been mentioned vomiting occurred late in disease. Emmet Holt, in the second edition of his book, does not mention this fact, neither do Ashley and Wright in the 1892 edition of their handbook, "Diseases of Children."

The failure of temperature to fall to normal after disappearance of rash with the apparent absence of prominent complications with a family history of tuberculosis should be regarded with suspicion in cases of exanthemata.

The tubercle bacillus is a comparatively new arrival in South Africa. The native races who adopt civilized customs, as well as those who do not, fall an easy prey to its ravages.

THE SUCCESSFUL REMOVAL FROM THE MALE BLADDER OF A LOST FILIFORM BOUGIE BY ENDOVESICAL MANIPULATIONS.

VICTOR D. LESPINASSE, M.D.
Instructor in Genitourinary Surgery, Northwestern University Medical School.
CHICAGO.

Patient.—Mr. H. was referred to me by Dr. A. E. Mowry for treatment of a very tight stricture in the anterior urethra about 2 cm. inside of the meatus.

Examination.—I found a very nervous, excitable individual with a history of two mild attacks of urethritis, and recovery in each instance within two months. The present trouble began about six weeks ago when he noticed that it took him longer to empty his bladder than formerly and that the stream was with difficulty kept in the urinal. This condition has become progressively worse.

Examination.—On having him urinate into the glasses, it was observed that the stream was thin, crooked and of slight force, although the act was augmented by using the abdominal muscles. The urine was clear except for a few threads. On palpating the penis a hard, indurated mass could be felt on the under side about 2 cm. from the meatus.

Treatment.—On instrumentation, it was found that the meatus would admit only a No. 22 F. sound, and that this was arrested at 2 cm. from the meatus. I ran down the scale of sounds to 15 F., and none of them passing, I determined to use the urethroscope. When the stricture was observed, it appeared to be annular and the mucous membrane over it was practically normal. The opening was plainly visible and not obscured by folds or rugæ. On attempting to pass the filiform of the Le Fort instrument it passed easily and on attaching sound No. 12 F., I was enabled to pass it with little force; and there was a sensation of yielding at the strictured point. It was left in place 10 minutes. After withdrawal the patient was able to urinate with much greater freedom. He was told to report for repetition of the treatment on the third day.

He presented himself later, reporting that he was much better and had been free from distress since the treatment, except

that this day he noticed that the stream of urine was becoming a trifle smaller. Again the filiform passed easily and the sound No. 12 was passed easily in and all went well until I started to depress the handle in order to engage the tip in the membranous urethra, it seemed to catch and then immediately broke away and simultaneously the patient experienced severe pain in the penis. At that time I attributed this to the passage of the instrument over the sensitive prostatic urethra or traumatism to the verumontanum, but in reality it was due to the sharp edge of the metal fitting scraping the urethra. The apparatus was allowed to remain in place for 10 minutes and when withdrawn the filiform was missing, although its metallic fitting was still firmly screwed to the sound.

The patient arose and was told to urinate but no filiform appeared. He was then placed on the table and with a slender urethral alligator forceps, which just passed the stricture, the urethra was explored but nothing was obtained.

Operation (assisted by Dr. Alfred Fowler).—Cocain anesthesia of urethra and meatus was induced. The meatus was cut to 30 F. with scissors. Urethroscopic tube 28 F. was introduced to stricture. With a Kollman knife the band was divided to 28 F. in three places, one ventral incision and one on each lateral wall. The tube was slipped past the stricture and digital compression made on it to check hemorrhage. Next the tube was removed and the bladder distended with water. The cystoscope (Fig. 1) was introduced armed with small vesical forceps (Cabot's), and after a moment or two of manipulation the filiform was located, grasped and removed.

For the relief of such conditions we have two general methods: 1. Cutting operations, suprapubic and perineal. 2. Intravesical manipulation. Cutting operations are simpler, requiring only general instruments and general skill, but they entail a convalescence of at least a week, and in conditions of this sort any opening made in the bladder tends to stay open as long as there is obstruction in the natural passages. Hence, after recovery from the operation, the patient is in the same or even worse condition than before.

Intravesical manipulations require special instruments and special skill, especially the ability to introduce the instruments through the urethra.

In this particular case the latter seemed the best plan of procedure as opening the urethral lumen to a sufficient size to introduce the cystoscope would also be a step

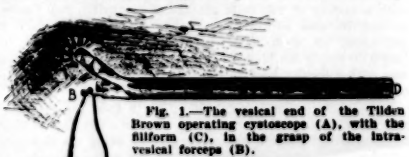

Fig. 1.—The vesical end of the Tilden Brown operating cystoscope (A), with the filiform (C), in the grasp of the intravesical forceps (B).

in the direction of giving the patient permanent relief from his troubles. The period of convalescence after this procedure is practically *nil*, and so, considering everything, I decided to do meatotomy, internal urethrotomy and cystoscopic removal of the filiform.

The Le Fort instrument (Fig. 2) employed was one of several purchased one year ago. Several of its fellows had cracked, as they usually do, and been discarded. This was the second time this particular filiform was used, and, on examination before using, it seemed to be perfect. The instruments are made with a single stout thread through the center and frequently crack, but this thread usually holds. In this instance, the entire filiform came away from its metal fitting.

The strain on the instrument during use is lateral and depends on the weight of the sound and the force used by the operator. In actual practice this occurs at the entrance to the stricture, or in the normal urethra at the bulbo-membranous junction. The filiform is already in a fixed portion of the urethral canal and it must lift the following sound up to the opening. Just here the operator should be very careful to have the sound in the axis of the urethra and with gentle manipulations relieve the strain and guide the sound into the fixed portion of the canal.

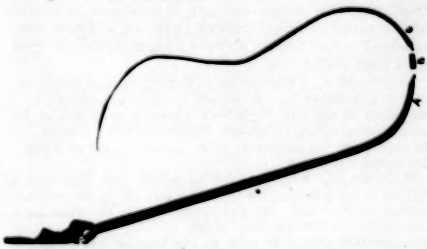

Fig. 2.—The LeFort instrument separated into its component parts: (A), the sound; (B), metal fitting; (C), the filiform.

SUMMARY.

Conditions in This Case.—Man: Filiform in bladder; stricture hard, admitting No. 12 F. 2 cm. from meatus; meatus admitting No. 22 F.

Measures Employed.—Urination, failure; urethral forceps, failure; meatotomy to 30 F., internal urethrotomy through urethroscopic tube with Kollman's knife to 28 F., hemostasis by digital pressure; cystoscopy, filiform grasped and removed by intravesical forceps, prescription given for urotropin (hexamethylenamin) and patient sent home.

Things to Be Learned.—1. To examine carefully all instruments before using them. 2. To remember that in using instruments or technic one should be prepared in armamentarium and in mechanical skill to meet any possible complication.

Result in This Particular Case.—The result was most happy. The man came into the office with a hard stricture of No. 12 F. and not nerve enough to have it operated on. When he left he had an urethral canal that was 28 F. in size and which with proper care will remain so.

RECOVERY FROM PIERCING OF BODY WITH HAY HARPOON.

C. A. HEATON, M.D.
M'CUTCHENVILLE, OHIO.

While recoveries are recorded in cases of bullet wounds of the lungs, it is more rare to have recovery take place after a wound by as large an instrument as a large prong of a harpoon hay fork.

On July 18, 1906, W. Z., 23 years of age, in robust health, was injured by the fall of a double-harpoon hay fork, weighing 20 pounds, from its attachment in the barn, 25 feet above him. One prong of the fork, having a diameter of 2 inches one way by ⅞ of an inch the other, perforated the chest, entering in the first intercostal space half an inch to the left of the sternum and emerging in the seventh intercostal space about five inches to the left of the spinal column. The distance between the two wounds was about 12 inches. The man fell on his knees, but did not lose consciousness and, seeing the crossbar of the fork just in front of his eyes, pushed it upward until he removed

the long piece of steel from his body. He was able to get off the wagon unaided and with a little assistance walked about ten rods to the house.

The patient was found in a condition bordering on collapse from shock and loss of blood. Penetration of the lung was indicated by the air mixed with the blood that was flowing from the wounds. Fortunately neither clavicle nor ribs were broken, but the clavicle was grazed. Assisted by my son, Dr. J. J. Heaton, I proceeded at once to dress the wounds, using every care to have them as aseptic as possible. The wound of entrance, which was about two and one-half inches long, was closed with several stitches and an antiseptic dressing applied, but the wound of exit was left open to provide for drainage. This wound was about one and a half inches in length, slightly smaller than that of entrance on account of the tapering of the prong of the fork toward its end.

The patient was put to bed in a semirecumbent position inclining to the left. He received during the night three hypodermic injections of morphin sulphate, grain ¼, and a little brandy in hot water. The wounds were dressed twice daily for two weeks. His improvement was continuous and without incident except a chill which occurred one night a week later. This, although exciting apprehension of septicemia, was followed by no serious result.

ACUTE ATROPHY OF THE LIVER FROM CHLOROFORM POISONING.

H. E. CUSHING, M.D.

CHAMPAIGN, ILL.

History.—On Aug. 23, 1906, I operated on Mrs. C., aged 27, for appendicitis. She had had two previous attacks and refused operation for three days before I operated. Her history, except the previous attacks, has no bearing on the case. She had taken nothing into the stomach but water for 48 hours, and only one-half cup of chocolate for 64 hours. The bowels had been loose before the attack and were in the best of condition at the time of the operation. The administration of chloroform was begun at 9:45 a. m., and lasted one and one-half hours. It was given with great care and was well taken, but required a large quantity, four ounces being used. The operation was what we call clean. The patient rallied well from the anesthetic, vomited only three times, the last time at 5 p. m., and was only slightly nauseated.

Postoperative History.—On being put to bed the pulse was 96 and of good quality. Nitrate of strychnin, gr. 1/40, administered hypodermatically every three hours. The pulse continued rapid all day, being 94 at 5 p. m., with respiration 24.

August 24: The patient slept brokenly during the night. At 6 a. m. temperature was 98, pulse 90, respiration 20. At 3 a. m. she began taking tablets of mild chlorid of mercury, gr. 1, soda bicarbonate, gr. 4, every hour until she had taken eight. She took water freely. At 11:30 a. m. she took 2 drams of a saturated solution of magnesium sulphate, and this dose was repeated once an hour for three doses. At 2:30 p. m., at her request, an enema of soapsuds was given by the nurse. This she retained for an hour, when it passed with a slight bowel movement and some flatus. The bowels moved freely at 5 p. m. and at 7 p. m., there was a slight involuntary movement. The kidneys had acted freely, once by catheter, at other times involuntarily. At 8 p. m. the temperature was 99, pulse 100, and of good quality, respiration 24. The patient had been very nervous and restless all day; there was no pain, but she was continually calling for something, and complained of being hungry. There was a peculiar look about the face which I did not like. It had a waxy appearance as seen after death.

August 25: At 5 a. m. the temperature was 98, pulse 98, respiration 24. She had not slept much and was restless all night. The patient complained of rheumatic pain in the shoulder and chest. She had taken one-half cup of chicken broth. She complained so much of pain that I directed that she be given codein, gr. ¼, every half-hour until relieved; she took five of these tablets. At 12 o'clock, noon, temperature was 98, pulse 96. At 5 p. m., temperature was 98.5, pulse 102, respiration 26. She had taken one-half glass of egg-nogg at 10:30 a. m., a cup of broth at 1 p. m., and an egg-nogg at 4 p. m., but she vomited immediately after the last. She slept nearly all the afternoon. At 7:30 p. m., she took a cup of broth, and at 10 p. m. vomited. At this hour temperature was 98 and pulse was 102.

August 26: At 5 a. m. temperature was 97.4, pulse 102, respiration 26. The patient had been very restless and irritable all night. She vomited at 2 a. m. and 5 a. m., and called for water continually, but was given only a small quantity at a time after 5 a. m. The abdomen was flat and flatus was passed freely. The pupils were dilated, but both the same. A marked icteric hue was noticeable on the legs and body. The kidneys were acting well, but the urine was dark. The patient slept one hour during the morning, but was restless when awake. At 11 a. m. temperature was 98.4, pulse 120. At 2 p. m., temperature was 99.1, by rectum, pulse 130. At 12:30 p. m. the mind seemed to be wandering. At 2 p. m. the face was deeply flushed and the jaundice color was deeper and had spread over the whole body and face. The patient was very restless, throwing her hands to her head, crying out hysterically as if in fear, and pleading piteously. Her breath was very offensive, almost fecal in odor. The tongue was covered with a dirty brown coat. Dr. Gray saw the case in consultation with me at 3 p. m. The abdomen was flat, no tympany. There was no tenderness except over the gall bladder, where pressure caused flinching. The dressings were raised and the wound found in good condition. The patient was so restless and was crying out so much that codein, gr. ¼, was administered hypodermically, and digitalin, gr. 1/50, was given in the same way every three hours. At 7 p. m. urine was passed by catheter, at least one pint in quantity. At 9 p. m. the pulse was 120, respiration 26. She was so delirious and restless that codein, gr. ¼, was given. The jaundice color was pronounced over the whole body.

August 27: At 3 a. m. the pulse was 140. At 6 a. m. pulse was 130. At 8 a. m. temperature, axillary, was 100.4; the patient was very yellow in color. Every point where the hypodermic needle had been used showed a hemorrhagic spot and hemorrhagic spots appeared on the body. The patient was in a comatose condition all night; the pupils were dilated to the full extent. At 7 a. m. 10 ounces of urine were passed by catheter; this was saved and analyzed. The temperature and pulse rose; at 12:30 p. m. axillary temperature was 104.8; pulse, 148.

The patient died at 1:45 p. m., one hundred hours from the time of beginning the anesthetic. No postmortem examination was allowed.

Examination of Urine.—Dr. Jennie Lyons made a thorough examination of the urine and made the following report:

Urine, catheterized specimen. Chemical examination: Color, greenish-yellowing-brown. Urine not clear, precipitate yellow. Specific gravity, 1,015. Reaction, acid. Albumin, small amount. No sugar. Bile, by nitric acid test, acetone.

Microscopic examination: Granular casts. Leucin. Tyrosin.

TYPHOID FEVER IN A PATIENT AGED SEVENTY YEARS.

WILLIAM G. DAGGETT, A.B., M.D.

Clinical Lecturer in Medicine, Yale University.

NEW HAVEN, CONN.

The infrequency of the occurrence of typhoid fever in persons of advanced years has long been a matter of note and makes it seem important to place on record the fellowing case which came under my observation:

Patient.—Mrs. E. P., aged 70, had never had a serious illness. Family history was negative.

Present Illness.—Patient passed most of the winter of 1905-06 in Florida, and noticed no departure from her usual health until late in March, when she found herself very easily fatigued. She left Florida, March 29, for Savannah, Ga., and remained in the latter place until April 12. While in Savannah she had more or less diarrhea and marked lassitude. She arrived in Washington, D. C., April 13. The lassitude per-

sisted and her strength was notably below par. On April 19 she fell on a marble staircase in her hotel and sustained a scalp wound, which entailed a moderate loss of blood and required several stitches. Then for the first time she came under medical observation, and on April 22 a nurse was employed. During the ensuing four days her temperature ranged from 99.6 to 102.8, and on April 25 several rose spots were discovered on the abdomen.

Clinical History.—She was at once removed to the Garfield Memorial Hospital with a diagnosis of typhoid fever. On admission no Widal reaction could be obtained, the urine showed the presence of albumin and hyaline and granular casts, a blood count gave the number of leucocytes as 8,132, and a vaginal examination showed considerable discharge from a senile endometritis. The temperature fell gradually until, on May 1, it was normal. The negative result of the Widal test, the subsidence of the temperature, and the discovery of other conditions which might account for some constitutional disturbance caused the abandonment of the idea that she was suffering from typhoid infection. She left Washington and came directly to her home in New Haven, still weak, but able to be up and dressed.

I saw her for the first time on May 8, when, about 8 a. m., she had a sharp chill lasting about one hour, with her temperature rising to 104. This was followed by a continued fever, which lasted until May 23, the temperature declining by lysis. On May 10 one characteristic rose spot was found on the abdomen. The vaginal discharge ceased shortly after her arrival in New Haven. During the febrile period there were no toxic symptoms, and her convalescence was uneventful.

Laboratory Findings.—The laboratory findings at various times were as follows:

April 25, blood examination by Dr. H. H. Donnally, Washington, showed hgb., 65 per cent., no Widal reaction, 12,700 leucocytes, no plasmodia, and slight poikilocytosis.

April 26, at the Garfield Memorial Hospital, the leucocytes numbered 8,132. April 27, at the same hospital, urine examination resulted as follows: Color, lemon; reaction, acid; appearance, cloudy; specific gravity, 1,010; albumin, a faint pus trace; a few hyaline and finely granular casts; a moderate number of flat epithelial cells, some round cells, one cuboidal cell, and a large number of leucocytes.

May 9, Dr. C. J. Bartlett, professor of pathology in Yale University, examined the blood and found 5,288 r. b. e., 8,980 w. b. c., no plasmodia malariæ, and a partial, though insufficient response to the Widal test. Differential count gave 66.5 per cent. of polymorphonuclear leucocytes, 26.75 per cent. small mononuclears, and 6.75 per cent. large mononuclears.

May 13, Dr. Bartlett made a second Widal test which resulted in a somewhat more pronounced clumping, but still not sufficient for a positive diagnosis. His urine examination showed rather less than 0.01 per cent. of albumin, some granular casts, and a few pus cells.

June 18, urine examination by Dr. D. M. Lewis, bacteriologist of the board of health of New Haven, showed a trace of albumin and marked bacilluria. From this specimen, which was obtained by catheter under strict precautions, a pure culture of the colon bacillus was isolated.

June 27, Dr. Lewis obtained a positive Widal reaction, and no reaction from the organism found in the urine.

The clinical history and laboratory findings thus show that the patient suffered from a mild typhoid infection, with a relapse; a coincident senile endometritis; and a subacute nephritis caused by the colon bacillus.

THE CURE OF TUBERCULOUS PERITONITIS.

ROBERT L. PITFIELD, M. D.
PHILADELPHIA.

It has long been known that if a case of primary tuberculosis of the peritoneum is operated on, the peritineal cavity merely opened and then closed, the disease undergoes a retrograde change, the patient sometimes recovering permanently.

At one time it was supposed that the iodoform sprinkled in the cavity of the peritoneum had something to do with the cure. Again, others thought that the simple entrance of air was a factor.

It has occurred to me after aiding in the opening of the peritoneum in a case of primary tuberculosis of that cavity, that the surgeon unwittingly performed Pfeiffer's phenomenon. After simply opening the peritoneum evacuating some fluid and closing it the patient began to improve and now, after three months, is nearly well. Instead of the air doing any good, the improvement may have been wrought by the access of some of the patient's blood to the serous cavity. The blood, no doubt, in all such cases contains some immune serum and the serous fluid contains some complement, perhaps.

Immune serum plus complement, plus tubercle bacilli, may effect a bacteriolysis of the latter, as in the case of cholera bacilli, when some serum from an animal immunized against cholera bacilli and the natural serum (complement) in the peritoneal cavity, if mixed either in the peritoneal cavity or in a test tube, effect a solution of the bacilli. Members of the myco-bacteriaceæ group (tubercle bacilli) do not dissolve ordinarily in the presence of either immune serum or some complement serum or both, but they may do so in the body. Or, the admixture of the immune serum with the peritoneal contents may effect a destruction of the bacilli by reason of the opsonins that it may contain, or in some other way stimulate phagocytosis.

At any rate, it would do the patient very little harm to allow some of his own blood to remain behind in the peritoneum after a section, and I write this merely as a suggestion to surgeons to try this simple experiment of leaving a few drams of blood behind before closing the abdomen in tuberculous peritonitis cases that come to operation.

In support of this theory that the free blood in the peritoneum effects a cure in some cases, I need but mention that in those cases that are thoroughly irrigated recovery is not nearly so apt to take place.

5211 Wayne Avenue, Germantown.

CESAREAN SECTION PERFORMED BY A COW.

W. B. MORSE, M.D.
SALEM, OREGON.

[We recently received a newspaper clipping giving an account of a pregnant woman being gored by a cow, the abdominal walls and the uterus being lacerated so that the child was born. We wrote to Dr. Morse about the matter and he states that the newspaper account was correct. His report follows.—Ed.]

Mrs. W. E., aged 31, pregnant at full term with her third child, was standing in the road about 60 feet from the house, watching her husband unload hay from a wagon. A vicious two-year-old heifer charged her and inserted a very sharp horn into the abdomen near the anterior superior spinous process of the ilium. It penetrated the abdominal wall, uterus and membranes, but escaped the child. The point of the horn then emerged again just to one side and below the umbilicus. The result was two transverse rents, the upper one about 5 inches long and the other clear across the abdomen. The child was delivered through the larger opening and fell to the road, where it was picked up by the father. I made an eight-mile trip and arrived about 20 minutes after the mother's death from hemorrhage. The uterus was outside the body, torn clear across and inverted, with afterbirth and membranes, still attached. The child is still alive and doing well. I have found histories of several similar cases in Gould and Pyle's work on medical curiosities.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

EUCAMUL.

An emulsion of oil of eucalyptus in glycerin and honey, containing 0.13 Cc. (2 minims) of the eucalyptus oil in 4 Cc. (1 fluidram).

Dosage.—2 to 4 Cc. (½ to 1 fluidram), as needed.

Prepared by Edward G. Bins, Los Angeles, Cal.

EUGALLOL.

A solution consisting of two parts of monoacetylpyrogallol, $C_6H_3(OH)_2(CH_3COO)$, and one part of acetone.

It is prepared by treatment of pyrogallol with acetic anhydride or acetyl chloride in the presence of a solvent and subsequent removal of the solvent by distillation. It is also obtained by other methods.

It is a syrupy, dark yellow, transparent liquid, readily soluble in water and in acetone, and containing 66 per cent. of monoacetylpyrogallol.

Actions and Uses.—Eugallol acts as an energetic substitute for pyrogallol, but is liable to produce local irritation when applied to the skin.

It is recommended for external use in old and persistent cases of psoriasis.

Dosage.—It is applied pure by pencilling once a day, covering the painted part with powdered zinc oxide, suspending the application a few days if it is followed by irritation.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York. German patent No. 104,663.

EUMYDRIN.

METHYLATROPINE NITRATE. ATROPINEMETHYL NITRATE.

Eumydrin, $C_6H_3(HO.CH_2)CH.CO_2.C_8H_{11}N(CH_3)_2NO_3 = C_{18}H_{27}O_6N_2$ is the nitrate of methylated atropine.

It is obtained by the interaction of methyl atropine halide with metallic nitrates, or by treatment of the methyl atropine base with nitric acid, by interaction of atropine with methyl nitrate and by other patented processes.

It is a white, crystalline salt, melting at 163° C. (325.4° F.), odorless, permanent and readily soluble in water or alcohol, but very sparingly soluble in ether or chloroform. A quantity of 100 parts contains atropine equivalent to about 90 parts of atropine sulphate.

On warming 0.01 Gm. of eumydrin with 1.5 Cc. of sulphuric acid until the solution begins to darken, and at once adding, carefully, 2 Cc. of water a violet color develops and at the same time a faint peculiar aromatic odor appears. A solution of 0.05 Gm. of eumydrin in 3 Cc. of water remains clear on the addition of either 1 Cc. of sodium hydroxide solution or of ammonia water.

Being an alkaloidal salt it is incompatible with alkaline solutions, etc.

Actions and Uses.—Eumydrin is a mydriatic and antihydrotic, replacing atropine sulphate both internally and externally in corresponding doses. It is claimed that it dilates the pupil more rapidly than atropine and the dilatation is of shorter duration—being intermediate in these respects between atropine and homatropine. It is said to be much less toxic than atropine, so that larger doses may be given to secure the effect. It is particularly recommended for the treatment of night sweats, whooping cough and the relief of enuresis.

Dosage.—Internally as an antihyrotic, 0.001 to 0.0025 Gm. (1/60 to 1/24 grain). Externally as mydriatic, in solutions about one-tenth stronger than the usual atropine solutions.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). German patent Nos. 137,622 and 138,443.

EUPHORIN.

PHENYL URETHANE. PHENYLETHYLURETHANE. PHENYLCARBAMIC ACID ETHYL ESTER.

Euphorin, $CO(HN.C_6H_5)(OC_2H_5) = C_9H_{11}O_2N$, is a compound closely allied to Æthylis Carbamas, U. S. P. (urethane) and differing from this by the replacement of the group NH_2 by NHC_6H_5.

It is prepared by the action of aniline on chlorformic acid ethyl ester.

It forms colorless needles or a white powder, melting at 50°-51° C. (122° to 123.8° F.), having a faint aromatic odor and clove-like taste. It is almost insoluble in water, readily soluble in diluted alcohol, in alcohol and in ether.

Actions and Uses.—Euphorin is anodyne, antipyretic and antiseptic.

It is recommended in rheumatism, sciatica, headache, etc. Externally it is recommended to be applied as a dusting powder in venereal and skin diseases, ulcers, burns, etc.

Dosage.—0.5 to 1 Gm. (8 to 15 grains) dissolved in wine or suspended in water; externally in powder, in lanolin ointment and in superfatted soap.

Manufactured by Fabrik von Heyden, Radebeul near Dresden. U. S. trademark.

EUPHTHALMIN.

EUPHTHALMINE HYDROCHLORIDE. PHENYLGLYCOLYL-METHYL-VINYL DIACETONALKAMINE HYDROCHLORIDE.

Euphthalmin, $C_{17}H_{25}NO_3.HCl$, is a mandelic acid derivative of beta-eucaine.

It is prepared by methylating vinyldiacetonalkamine (obtained as explained under beta-eucaine), treating the methylvinyldiacetonalkamine produced with a weak solution of mandelic acid (phenylglycollic acid) dissolving the base (euphthalmine) so obtained in ether, passing gaseous hydrochloric acid into the solution, and crystallizing the salt from its ether solution.

It is a colorless, crystalline powder, melting at 183° C. (361.4° F.), readily soluble in water and in 2 parts of alcohol.

Actions and Uses.—Euphthalmin produces prompt mydriasis free from anesthetic action, pain, corneal irritation, or rise in arterial tension. It has little or no effect on accommodation, and this disappears more rapidly than with atropine, cocaine, homatropine, etc. In its effects on the general system, euphthalmine very closely resembles atropine.

It is recommended as an aid in ophthalmoscopic examinations in place of atropine, homatropine, etc.

Dosage.—2 or 3 drops of a 5 to 10 per cent. solution, according to age of the patient and the nature of the case, are instilled into the eye.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. patent No. 663,754. U. S. trademark No. 35,541.

EUQUININE.

QUININE ETHYL CARBONATE. EUCHININ. CHININUM AETHYLCARBONICUM.

Euquinine, $C_2H_5O.CO.OC_{20}H_{23}N_2 = C_{22}H_{28}O_4N_2$, is quinine ethyl carbonic acid ester.

It is prepared by the action of chlorocarbonic ethyl ester on quinine $C_2H_5O.COCl + C_{20}H_{24}N_2O_2 = HCl + C_2H_5O.CO.OC_{20}H_{23}N_2O$.

It is a light fleecy conglomeration of delicate, white needles, melting at 85° C. (203° F.) and practically tasteless. It is sparingly soluble in water, but readily soluble in alcohol, ether and chloroform. It is slightly alkaline in reaction, forming well crystallizable, bitter salts with acids. It produces a tasteless tannate.

Its solutions in acidulated water have the characteristic bitter taste of quinine. On heating a mixture of 0.2 Gm. of euquinine, 3 Cc. of solution of sodium hydroxide and a little iodine, the odor of iodoform is manifested. Like quinine its solution in dilute sulphuric acid exhibits strong, blue fluorescence, and it gives also the so-called thalleioquin reaction, but not the herapathite reaction. A solution in nitric acid should not change on addition of either silver nitrate or barium chloride.

It should leave no residue on combustion.

It is incompatible with acids which will develop the bitter quinine taste.

Actions and Uses.—Euquinine is claimed to have the same action as quinine, with the advantage of being tasteless, owing to its insolubility in water and alkaline media.

Dosage.—The same as quinine.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M. (Merck & Co., New York). U. S. patent No. 585,068. U. S. trademarks Nos. 640,977 and 701,523.

EURESOL.

RESORCIN MONACETATE. MONACETYL-RESORCINOL.

Euresol, $C_6H_4(OH)(CH_3COO) = C_8H_8O_3$, is an acetic acid ester of resorcinol (1,3-phen-diol).

It is obtained by acting on resorcinol with acetic anhydride or acetyl chloride, thus: $C_6H_4(OH)_2 + CH_3COCl =$ $C_6H_4(OH)(CH_3COO) + HCl$, or by otherwise replacing one hydroxyl group in resorcinol with an acetyl group.

It is a thick, honey-yellow, oily liquid, having an agreeable odor, boiling at 283° C. (541.4° F.) and soluble in acetone.

Actions and Uses.—Its action is similar to that of resorcinol, but milder and more lasting because of the gradual liberation of the phenol.

Euresol is recommended in acne, sycosis, seborrhea, and particularly in the treatment of chillblains.

Dosage.—It is applied in 5 to 20 per cent. ointments and in acetone solution.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York. German patents Nos. 103,857 and 122,145.

EURESOL SOAP.

CHILLBLAIN SOAP.

A soft soap, supplied in tubes, containing euresol, eucalyptol and oil of turpentine.

Prepared by Knoll & Co., Ludwigshafen and New York.

EUROPHEN.

DI-ISOBUTYL-CRESOL IODIDE. ISOBUTYL-ORTHOCRESOL IODIDE. IODOSO-DIISOBUTYL-CRESOL.

Europhen, $C_6H_2(C_4H_9)(CH_3)(OI).C_6H_2(CH_3)(:O)(.C_4H_9) = C_{22}H_{29}O_2I$, is a condensation product of 2 molecules of isobutylorthocresol, with 1 atom of iodine, analogous to Thymolis Iodidum, U. S. P.

It is prepared by the addition of a solution of iodine in potassium iodide to an alkaline solution of isobutylcresol, washing the precipitate with water, and drying it at a moderate temperature.

It forms a yellow, voluminous powder, fusing at 110° C. (230° F.), containing 28 per cent. of iodine, and having a faint saffron-like odor. It is insoluble in water or glycerin, but readily soluble in alcohol, ether, chloroform and the fixed oils. It is permanent in the dry state, but splits off iodine readily when moistened, and rapidly when heated with water at 70° C. (158° F.), particularly in the presence of alkalies.

When triturated with glycerin and water, it yields a filtrate which is turned bluish by the addition of freshly prepared starch paste. Its alcoholic solution produces a yellow precipitate with mercuric chloride.

It should not be exposed to heat, light, or damp air; it is incompatible with starch, metallic oxides, mercuric salts, and alkaline hydrates and carbonates.

Actions and Uses.—Its action is similar to that of iodoform and thymol iodide. It is claimed especially to be useful in the treatment of venereal ulcerations.

Dosage.—Europhen may be given internally in the form of pills in doses of from 0.2 to 0.3 Gm. (3 to 5 grains). Locally it may be used as a dusting powder in substance or mixed with an equal quantity of finely powdered boric acid, as an ointment, with wool fat (lanolin), or as a 5 per cent. embrocation, dissolved in olive oil.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 495,204; German patent No. 84,830. U. S. trademark No. 17,888.

FERRICHTHYOL.

FERRIC ICHTHYOL.

A derivative of ichthyol in which about 2.5 per cent. of iron is contained.

It is a brown-black, voluminous, non-hygroscopic powder, nearly odorless and tasteless. It is insoluble in the ordinary solvents as also in diluted acids and alkalies.

Actions and Uses.—It is said to be alterative, antiseptic, hematinic and tonic. It is recommended in anemia, chlorosis, etc.

Dosage.—1 to 2 Gm. (15 to 30 grains) in tablets.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York).

FERRIPYRINE.

A name applied to a product identical with Ferropyrine, which see.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

FERROPYRINE.

ANTIPYRINEFERRIC CHLORIDE. ANTIPYRINA CUM FERRO.

Ferropyrine, $(C_{11}H_{12}N_2O)_3.(FeCl_3)_2$, is a compound of antipyrine and ferric chloride, containing about 36 per cent. of ferric chloride and 64 per cent. of antipyrine.

It is prepared by mixing solutions of 5 parts of crystallised ferric chloride in 10 parts of 90 per cent. alcohol and 5 parts of antipyrine in 10 parts of alcohol and 50 parts of ether, washing the precipitate with ether, and drying it on porous tiles at 40° C. (104° F.).

It is a yellowish-red, crystalline powder, having an acid-astringent taste. It is soluble in 5 parts of cold water, but requires 9 parts of hot water for solution; it is soluble in alcohol, but insoluble in ether.

It should form a clear blood-red solution in water. Its aqueous solution 1:5 affords a precipitate of ferric hydroxide on addition of ammonia in excess, and the filtrate should give no reaction for nitric or sulphuric acid, nor heavy metals, and should yield a residue on evaporation, which is completely volatilized when heated on platinum. After acidification with nitric acid, the filtrate yields a white precipitate with silver nitrate and in the filtrate from this the antipyrine may be determined by means of ferric chloride or by nitrous acid.

It is incompatible with alkalies, their carbonates and bicarbonates.

Actions and Uses.—It is hematinic, hemostatic, astringent, analgesic and tonic. Its styptic action is pronounced and said not to be accompanied by irritant effects. According to Fraenkel it combines with its hemostatic properties the injurious by-actions which limit the application of ferric chloride as a hemostatic.

It is recommended internally in anemia, chlorosis, gastric and intestinal hemorrhage, intestinal catarrh, etc., in migraine and neuralgia. Externally it is applied in gonorrhea, epistaxis, hemorrhages from the throat or vagina, or bleeding after tooth extraction, etc.

Dosage.—0.3 to 1 Gm. (5 to 15 grains) in powder, with sugar and peppermint, or in solution. Externally 1 to 1.5 per cent. solution as injection, to 20 per cent. solution or pure for hemorrhages.

Manufactured by Knoll & Co., Ludwigshafen. U. S. patent No. 848,352. U. S. trademark No. 26,860.

FORMALIN.

A name applied to Liquor Formaldehydi, U. S. P.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin. (Schering & Glatz, New York). U. S. trademark No. 23,629.

FORMIN.

A name applied to Hexamethylenamina, U. S. P.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York).

GALLOGEN.

ELLAGIC ACID. BENZOARIC ACID.

Gallogen, $\begin{matrix} C_6H(OH)_2 \\ / \quad | \quad \backslash \\ CO \quad | \quad O \\ \backslash \quad | \quad / \\ C_6(OH)_2.COOH \end{matrix} = C_{14}H_8O_8$ is an-

hydrous ellagic acid prepared from Divi-divi, the pods of *Cæsalpina coriaria*, containing more than 50 per cent of tannin.

It is prepared by prolonged boiling of an aqueous extraction of divi divi, whereby the amorphous acid assumes a crystalline condition and is completely precipitated, then collecting the precipitate, washing and drying.

It is a yellowish, odorless, tasteless powder, insoluble in all acid and neutral liquids, but soluble in alkaline liquids to the amount of 2 per cent., such solutions being, however, very readily oxidized.

Its solutions in alkaline media give all the reactions of tannic acid with iron salts, gelatin solution, etc. With fuming nitric acid it gives a characteristic dark red color.

It is incompatible with alkaline liquids.

Actions and Uses.—Gallogen is an astringent and antidiarrheic, slowly decomposed in the intestinal tract, thus exerting its astringent action gradually during its passage.

It has been recommended in dysentery, cholera infantum, diarrhea, and is said to be useful even in those of a syphilitic or tuberculous origin.

Dosage.—0.3 to 0.5 Gm. (5 to 8 grains) for children; 0.6 to 1 Gm. (10 to 15 grains) for adults, suspended in neutral or slightly acid media.

Manufactured by Ad. Heinemann, Eberswalde (C. Blachoff & Co., New York). German patents Nos. 137,033 and 137,034.

GERMICIDAL SOAP.

A solid product containing 2 per cent. of mercuric iodide in combination with hard soap.

It is a bluish-white powder compressed into cakes. It is soluble in water.

Actions and Uses.—It is claimed to be a disinfectant which does not coagulate albumin nor corrode steel or nickel. It is stated by the manufacturers that its germicidal activity has been thoroughly tested on typhoid, cholera, diphtheria and pus germs, which it destroys within one minute.

It is recommended for the disinfection of the hands and for washing out infected cavities.

Dosage.—Applied externally, dissolved in water. A mild form is also prepared containing 1 per cent. of mercuric iodide; also a soft soap containing 1 per cent. of mercuric iodide.

Prepared by Parke, Davis & Co., Detroit, Mich.

GLUTOL-SCHLEICH.

FORMALIN GELATIN.

A chemical combination of gelatin and formaldehyde.

It is prepared by dissolving 500 Gm. of gelatin in 375 Gm. of water, adding 25 drops of formaldehyde solution, exposing the mass so obtained, in a covered box over lime, to the vapor of formaldehyde by the aid of a layer of cotton wool saturated with it until a dry mass is produced, and reducing this to powder.

It is a white, odorless powder, insoluble in water under ordinary conditions, but dissolved when heated with water under pressure, the solution thus produced gelatinizing on cooling. It is not changed by the action of acids, alkalies or saline compounds of any reaction, but is slowly decomposed in contact with living cells. It may be sterilized without decomposition.

Action and Uses.—It is claimed that while in itself non-antiseptic, non-irritant and non-toxic, it becomes antiseptic and bactericidal in contact with living cells, in consequence of the elimination of nascent formaldehyde, which is split off very slowly but steadily.

Glutol is recommended as an odorless, non-irritant, non-poisonous aseptic dressing, having sustained antiseptic action for wounds, ulcers, burns, etc.

Dosage.—It is employed undiluted as a dusting powder, etc.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). German patent No. 104,365, U. S. patent No. 572,293. U. S. trademark No. 28,431.

GLYCERIN EMOLLIENT.

A mixture containing: Oil of gaultheria, 2 Gm. (30 grains), boric acid, 23 Gm. (¾ ounce), corn starch, 88 Gm. (3 ounces), glycerin, 885 Gm. (28.5 ounces), tragacanth, 17 Gm. (263 grains). It is a transparent soft solid.

Actions and Uses.—It is intended for use as a lubricant in gynecologic and surgical practice.

Dosage.—It is put up in collapsible tubes and is to be applied to the dry skin. After use it can be washed off in a stream of water.

Prepared by Parke, Davis & Co., Detroit, Mich.

GLYCEROPHOSPHATES.

GLYCERINOPHOSPHATES. GLYCERYLPHOSPHATES.

Glycerophosphates are the salts of glycerophosphoric acid, $H_2(CH_2OH.CHOH.CH_2)PO_4$; usually the two remaining hydrogen atoms of phosphoric acid are replaced by the base: $Na_2(CH_2OH.CHOH.CH_2)PO_4$.

The calcium compound is prepared by heating glycerin and phosphoric acid under certain conditions for a considerable time and then neutralizing with lime. The precipitated calcium phosphate is removed, while the calcium glycerophosphate remains in solution. From the calcium salt the other salts can be prepared by precipitating calcium by the appropriate salt of the metal whose glycerophosphate is desired. Thus the addition of sodium carbonate to a solution of calcium glycerophosphate yields insoluble calcium carbonate and a solution of sodium glycerophosphate.

The potassium and sodium glycerophosphates are dense syrupy liquids, exceedingly soluble in water, and represent 75 per cent. of the respective salts in a dry condition. The calcium, iron, lithium, magnesium and manganese glycerophosphates are pulverulent salts, moderately soluble in water.

When a solution of a glycerophosphate is tested by ammonium molybdate for the presence of a phosphate, only a slight yellow precipitate should form at once.

The watery solutions of glycerophosphates decompose in a short time. They should be made from sterilized water, but hot liquids should not be used for their preparation.

Actions and Uses.—These salts were introduced as "nerve foods" and tonics on the theory that their phosphorus, being a step nearer lecithin, is assimilated more readily than that of hypophosphites. Neither the experimental nor the clinical evidence is considered conclusive by all authorities.

Dosage.—The potassium and sodium salts may be given hypodermically 0.2 to 0.25 Gm. (3 to 4 grains) in normal saline solution, or *per os* 0.25 to 0.65 Gm. (4 to 10 grains) in water or syrup. The calcium, iron, lithium, magnesium and manganese salts 0.2 to 0.65 Gm. (3 to 10 grains) doses, preferably in the form of tablets; the quinin salt in 0.1 to 0.33 Gm. (1½ to 5 grains), and the strychnine salt in 0.001 to 0.003 Gm. (1/60 to 1/20 grain) doses.

GUAIACOL-SALOL.

SALICYLATE OF GUAIACOL. GUAIACOLIS SALICYLAS.

Guaiacol-salol, $C_6H_4.OH.COO(.C_6H_4.OCH_3) = C_{14}H_{12}O_4$, is the salicylic ester of guaiacol, analogous to salol.

It is prepared by treating a mixture of sodium salicylate and sodium guaiacolate, in molecular proportions, with phosphorus oxychloride, washing the product of the reaction with water and crystallising from alcohol.

It is a white crystalline powder, tasteless, but having a salol-like odor. It is insoluble in water, but soluble in alcohol, ether and chloroform. It melts at 65° C. (149° F.).

Being an ester, it is decomposed by alkalies and alkaline carbonates with the formation of alkali salicylate and alkali guaiacolate. Strong acids decompose it with the liberation of guaiacol and salicylic acid. The alcoholic solution is colored wine red by the addition of ferric chloride, but if the alcoholic solution be dropped into a watery solution of ferric chloride a turbidity but no coloration is produced.

Actions and Dosage.—This compound acts like its constituents, being antiseptic and antirheumatic. It is recommended in phthisical diarrhea, dysentery, rheumatism, marasmus, chorea, etc.

Dosage.—1 Gm. (15 grains).

Manufactured by the Fabrik von Heyden, Radebeul near Dresden (Merck & Co., New York).

Correction Concerning Cascara Tonic Laxative Globules.—In THE JOURNAL, Sept. 29, 1906, page 1021, concerning Cascara Tonic Laxative Globules, it is stated that each globule is said to contain 0.2 gm. (30 grains), etc. This should read: Each globule is said to contain 0.2 gm. (3 grains), etc.

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THE AMERICAN MEDICAL DIRECTORY.

Two weeks ago we considered the necessity of coöperation between the various state licensing bodies through the medium of some central body which would act solely for the good of the profession and the public. It was shown that the organized profession itself is the only agency which can be expected to assume this duty and to perform this function. The work to be done, as well as the advantages to be derived from it, were set forth. Let us now consider one of the tangible and visible results of this work; namely, the publication of a list of the licensed physicians of the United States.

A medical directory should be a list of physicians legally entitled to practice medicine. It should be as complete and as accurate as it is possible to make it. It should be based on information that is reliable and impartial. It should treat all individuals alike, without discrimination or favoritism, and it should be published for the purpose of affording information and not primarily for commercial gain. The necessity of such a directory was early recognized by the leaders of the profession. Agitation along this line was begun at the first meeting of the American Medical Association.[1] In 1856, a committee was appointed to arrange for the publication of a directory.[2] This committee actually began preparation for its compilation. Practical obstacles in the way, however, prevented the consummation of the work and the project was abandoned. In 1868, Dr. S. D. Gross, then president of the Association, emphasized the need of such a work and, in accordance with his recommendation, another committee was appointed,[3] but again it was found impracticable to undertake this work at the time.

No further effort was made until 1901. In the report of the Committee on Reorganization, made at St. Paul that year, one of the objects outlined to be gained by a systematic organization was the publication by the profession itself of a reliable national directory.[4] As the St. Paul session was the starting point of a practical organization of the profession, so also was it the starting of a new era in which practical work for practical results was to be the keynote. The first effort toward the issuance of a complete national directory was the proposal to publish a Blue-Book. This matter was considered by the Board of Trustees in 1903 and, in 1904, at Atlantic City it was brought before the House of Delegates and "a directory of the members of the American Medical Association and of the state associations, by states, counties, etc.," was authorized.[5] This book was to contain the names, addresses, etc., of members of the organization, i. e., the members of the various constituent state associations and their component county branches, with membership in the American Medical Association indicated. The main idea was to make this Blue-Book the beginning of what should finally be a complete national directory, including all licensed physicians.

In the fall of 1904, the preliminary work on the Blue-Book was commenced, but, as the work progressed, it was realized that the labor of preparing such a book was almost as great as would be the compilation of a complete directory, since, to verify the registration, graduation, etc., of each individual member, it would be necessary to have a complete list of all licentiates and graduates. Furthermore, it was realized that a Blue-Book would be incomplete except in so far as it related to the members of the organization and that it would, therefore, be practically valueless as a directory.

During the following winter, the owners of the Standard Directory made a proposition to the Trustees to dispose of all their directory property to the Association. Only two editions of this directory had been published, the third being then in course of preparation. After considerable negotiation, the Board of Trustees, in February, 1905, obtained an option on the property, at the reduced price of $6,000. The owners of the Standard stipulated that this offer was not to be made public until the deal was closed. At the Portland Session, the Board of Trustees recommended to the House of Delegates that it authorize the purchase of the Standard Directory and the publication of a general directory of

1. See proceedings of the preliminary convention, 1847; resolution of Dr. J. L. Pierce of Michigan.
2. Transactions, vol. ix, p. 41.
3. Transactions, vol. xix, p. 35.
4. The report stated: "Another thing greatly needed is a reliable physicians' directory or register. Business houses are publishing what are called medical directories, but without exception all are unreliable. The best of them contain the names of pretenders, 'patent-medicine' vendors, horse doctors, *et id genus omne*. The qualifications may be given correctly, if the necessary information can be gotten easily, otherwise not. The profession in this, as in many other ways, is used by commercial houses as a means for money-making, and if there is money in publishing a directory, and there most certainly is, the profession should have it, and at the same time control it. The profession in Great Britain to a great extent at least controls the Medical Register. We should control it here. With such a system of registration as recommended, all information necessary for issuing a directory will always be ready without extra expense; it will insure a reliable book and one that will mean something. It will not be necessary to go outside of the profession for anything. The printing establishment now owned by the American Medical Association, with a little addition, can get out the book. State directories can be printed, and the same material, without any change, can be used in making the national directory. There will be no duplication of work. The national directories can be issued biennially or triennally, and a supplement annually, and also the state, when called for, separately and annually. The matter when once set up can be left standing, and corrections made as necessary. The Committee believes that the publication of an official, reliable directory is worthy of earnest consideration on the part of every physician."—The Journal A. M. A., May 25, 1901, p. 1451.
5. The Journal A. M. A., June 18, 1904, p. 1645.

the physicians of the United States, since it was possible to buy the Standard at a nominal figure and since the cost of compiling a complete directory would be comparatively little more than that of compiling the Blue-Book alone. This recommendation was adopted by the House of Delegates.

In this connection, it should be explained that the main object in purchasing the "Standard Directory" was to have a list of names as a basis to work on; not that the "Standard Directory" was to be taken as a model or that the information it contained was to be accepted as authoritative. It must be appreciated that the Association could not use the Standard or any other directory in compiling its book without the permission of the owners of such a directory. The right to use the "Standard Directory," even if no tangible property had been obtained with it, would have been worth much more than it actually cost. The tangible property acquired was alone well worth the price paid.

Active work was begun on the Directory in September, 1905. Complete copies of the records were obtained from the secretary of each state board. These records have been used for the compilation of the Directory. A staff of 6,000 correspondents was organized, consisting of one correspondent in each county, preferably the county secretary, and an additional correspondent in each town having ten or more physicians. Lists of graduates for the last five years have been obtained from every medical college now in existence, thus supplementing a fairly complete list of graduates obtained with the "Standard Directory." It is intended, immediately after the publication of the first edition of the American Medical Directory, to verify completely all the college information in the possession of the Association, and, thereafter, to keep the records corrected from year to year.

The work of compiling and editing the Directory and of comparing each state with the records of the state board has required more time than was at first estimated, as, in some cases, the records had been carelessly and incorrectly kept, and a large amount of correspondence and checking has been necessary to detect the many errors and correct the discrepancies. The work of compilation, revision and correction is now practically finished and the directory is in type. Each state, as completed, is being submitted in proof to the secretary of the licensing body of that state for verification, since only names of practicing physicians who are legally qualified will appear in the directory. It is not expected that the first edition will be absolutely free from error. Such a result would necessitate state records which were absolutely correct, correspondents who were infallible and compilers and proofreaders who were incapable of error.

TOBACCO AND ARTERIOSCLEROSIS.

The various studies of the causes of arteriosclerosis, particularly the purely clinical studies, have been so discordant in result that a certain amount of confusion regarding the etiology of this condition exists. As an example may be named the contrast between the general acceptance of the major rôle played by alcohol in the etiology of this disease, and the conclusions reached by Cabot in his study of the subject showing that alcohol, *per se*, had apparently little effect. There are a number of factors connected with the subject which render judgment of great difficulty. The variation in vulnerability of the vessels in different people is of great importance, as is the fact that in the complex conditions of modern life man is subjected to the action of a variety of poisons, either produced by himself or wilfully or unknowingly introduced from without. While it may be safe to assume that a single substance, like alcohol, does not of itself lead to arteriosclerosis, it is by no means safe to conclude that it may not be a potent factor acting in conjunction with other poisons.

Aside from alcohol, one of the most commonly used poisonous substances is tobacco. Its active principle, nicotin, has long been known to be one of the most deadly of poisons, and, though it is present in almost infinitesimal quantities in tobacco smoke, smokers themselves would probably be the last to deny that it may produce very appreciable physiologic action. As a possible source of damage to the arteries, tobacco has been under suspicion for some time and, clinically at any rate, its connection with some forms of vascular disease, such as intermittent claudication, seems fairly well established. The investigations of Adler, made some years ago, in which tobacco infusion was administered to animals *per os*, did not seem to bear out clinical results, and the more recent experiments of Josué, who used intravenous introduction, were also negative. Adler and Hensel,[1] working without knowledge of Josué's failure, have reached definite results from the intravenous injection of pure nicotin. Briefly stated, those results are the production in rabbits of a form of arterial degeneration similar to that produced by adrenalin. It is to be noted that not only arteriosclerosis, but also actual aneurisms were produced. These lesions, and the adrenalin lesions, are not, it must be confessed, exactly comparable to those of human arteriosclerosis, and there are those who have argued that the conditions are in no way comparable. This, we think, is an extreme view, and does not take into account the natural differences in reaction to a given reagent which the tissues of different animals show.

While the discussion of the pros and cons of this question is out of place here, it is fair to assume, we think, that nicotin is capable of setting up arterial changes in man. The exact rôle of tobacco in the production of arteriosclerosis, of course, can only be conjectured.

1. Jour. of Med. Research, 1906, vol. xv, p 229.

PREVENTION OF EPIDEMIC CEREBROSPINAL MENINGITIS.

Reference has been made several times recently in these columns to the genesis and the prevention of epidemic cerebrospinal meningitis. The exact mode of spreading of this disease was not understood satisfactorily until Goodwin and others demonstrated the frequency with which the meningococci occur in the nose and throat of healthy persons who come into contact with the sick. While the cocci die out quickly when deposited on clothing and other articles, they persist in the throat and nose as on a favorable culture medium. It appears that in persons who carry meningococci in this way no symptoms may be produced at all or, at most, only local catarrhal disturbances.

It is easy to understand how carriers of meningococci must be a source of great danger to individuals readily susceptible to meningeal infection and to whom the organisms may be transferred either by contact or by droplets of moisture expelled in coughing, sneezing, speaking, etc. In order to minimize this danger so far as possible, Ostermann[1] suggests that the public should be informed of the mode of spreading and asked to observe certain precautions for at least three weeks after individual contact with a case of meningitis, among which may be mentioned the following: Close contact, kissing, the use of common utensils for eating and drinking, and the mingling with crowds, e. g., on street cars, should be avoided. In speaking and coughing one should keep at least an arm's length from other persons, and discharges from the mouth and nose should be deposited preferably on rags or paper handkerchiefs that may be burned; if handkerchiefs are used they, as well as other infected clothing, should be boiled for at least ten minutes or soaked in some standard germicidal solution.

These precautionary measures have the approval of Flügge, and they seem to be reasonable and practicable. The rapidity with which meningococci die out as they leave the human body render extensive disinfection of rooms, etc., occupied by the sick superfluous, and it is the meningococcus carrier that must be rendered as nearly harmless as possible. Plainly the number of possible carriers should be reduced to an absolute minimum by promptly limiting to the greatest extent possible the number of persons that come into contact with the sick or with those that care for the sick. Hence isolation, preferably in hospital, is clearly indicated. Physicians and nurses should bear in mind the danger of themselves becoming meningococcus carriers and thus conveying the disease further, and it would seem advisable for them to wear protective masks over the mouth and nose while in close contact with the sick. Finally, now that the mode of spreading of epidemic meningitis appears to be understood better than ever before, health officials, as well as physicians in general, must not delay to assume the responsibility for the prompt enforcement of the precautionary measures that so obviously are indicated.

1. Deut. med. Wochenschr., 1906, xxxii, No. 11.

EXPERIMENTAL DIABETES.

The experimental production of glycosuria may be brought about in several ways, the most prominent being by extirpation of the pancreas and the puncture of a certain point in the floor of the fourth ventricle discovered by Claude Bernard. Besides these methods, glycosuria may be brought about by the action of various poisons. Some of these poisons, e. g., phloridzin, while producing glycosuria, do not increase the amount of sugar in the blood, but rather diminish it, and they are supposed to act by injuring the kidney so that its power to hold back the sugar in the blood is destroyed and the blood is drained of sugar. As this process does not conform to the phenomena of diabetes the result of these poisons can not be considered as experimental diabetes, and is of minor interest to the practitioner aside from the use of phloridzin in testing kidney function.

Other poisons, e. g., piperidin, adrenalin, carbon monoxid, chloroform, etc., temporarily, at least, may produce a disturbance of sugar metabolism, apparently very similar to that which occurs in diabetes. There is hyperglycemia and consequent glycosuria. Some of these substances have been shown by Herter to act very energetically when applied locally to the abdominal organs, especially the pancreas. The first explanation of this fact was that a disturbance of pancreatic function was directly brought about by injury to the organ or by the reducing action of the substances applied. F. P. Underhill,[1] however, brings forward evidence to show that the influence of these drugs is not local nor to be explained by direct influence on any particular organ, as the pancreas, but is probably due to the dyspnea which they cause. "Dyspnea, however induced, calls forth a marked hyperglycemia and glycosuria without the intervention of any drugs; the typical rise in the sugar content of the blood produced by piperidin fails to appear when oxygen is administered. It is likely, therefore, that this experimental diabetes involves defective oxidation of carbohydrate material. Hyperglycemia is the constant factor, and glycosuria follows whenever there is a sufficient accumulation of carbohydrates in the blood.

The considerations presented are inadequate to explain the phenomena of adrenalin diabetes. The administration of oxygen after painting the pancreas with adrenalin did not prevent the hyperglycemia and glycosuria. The action of this substance appears to be unique.

1. Jour. of Biologic Chemistry, vol. i, No. 1, Oct., 1905.

THE VIABILITY OF THE TYPHOID BACILLUS IN WATER.

While it is generally conceded that, under ordinary circumstances, typhoid fever is most commonly transmitted by water, our knowledge of the life history of the germ in this medium is far from complete. So far as ice is concerned, the matter of the viability of the germ has been pretty well tested, and it is now generally conceded that, except under very unusual circumstances, the danger from this source is practically *nil*. It has generally been assumed that in water under normal circumstances the bacillus of typhoid fever disappears rather rapidly, partly as the result of physical agencies like light and sedimentation, and partly as the result of the antagonism of the saprophytes with which it is associated. This is, no doubt, partly true, but the recent work of Wheeler[1] shows that it is not entirely true. For example, Wheeler found that in well water with considerable organic pollution, at room temperature, and with the exclusion of light, a considerable increase in the number of typhoid bacilli took place. It is in wells that such conditions of contamination and exclusion of temperature might be found. Wheeler also showed that not all saprophytes are antagonistic to typhoid bacillus; one was observed which grew symbiotically with it, both organisms increasing in number. These facts should be borne in mind in investigating the sources of typhoid epidemics.

ETHER DAY.

The student of medicine in the United States, in a short-sighted endeavor to have his valuable time all count for what he considers "practical," is prone to slight the historical side of medicine. Some of our medical faculties are endeavoring to give their students at least a taste of medical history, but there are other means of emphasizing historical dates, for example, ceremonies commemorating events of either local, state or national importance. Such a contribution to the education of the student and physician is "Ether Day," which will be celebrated October 16 at the Massachusetts General Hospital. This day will be the sixtieth anniversary of the performance of the first operation under ether at that hospital. This historic event was duly commemorated ten years ago on the occasion of the semi-centennial celebration of the introduction of surgical anesthesia, and since that occasion the hospital authorities have undertaken to establish the custom of keeping "Ether Day" each year, to remind the young physicians and nurses of the hospital of its most sacred tradition. It would not be amiss for other hospitals, colleges or societies to establish some such custom so that the memory of America's great contributions to medicine will not grow dim to the coming generation. There are abundant opportunities for such events if we will but look about us, and these commemorations will not only contribute to historical knowledge, but to the general *esprit de corps* of the profession.

1. Jour. of Med. Research, 1906, vol. xv, p. 269.

Medical News

GEORGIA.

Medical College Opens.—The Atlanta College of Physicians and Surgeons opened for its fifty-second annual session, October 1. The exercises were held in the new building, which, when completed, will have cost about $100,000.

Personal.—Dr. T. O. Powell, superintendent of the Georgia State Sanitarium, Milledgeville, is reported to be critically ill. ——Dr. Percy L. Jones, Cedartown, now on duty at Fort Preble, Maine, will leave for Europe January 1.——Dr. William A. Jackson, Atlanta, a member of the Governor's Horse Guard, while on his way to the armory for duty, September 20, was assaulted by negroes. He was removed to a sanitarium and is reported to be improving.

Pasteur Institute Report.—The board of governors of the Pasteur Institute and Laboratory of Georgia, Atlanta, held its sixth annual meeting October 6. During the year 471 patients were treated, with only 2 deaths. Three patients developed the disease after treatment had been begun and died with hydrophobia. The following officers were elected for the ensuing year: President, Dr. Henry R. Slack, Atlanta; vice-president, Dr. James H. McDuffie, Columbus; physician in charge, Dr. Charles N. Brawner, Atlanta; assistant, Dr. Edward C. Cartledge, Atlanta, and pathologist, Dr. Claude A. Smith, Atlanta.

ILLINOIS.

Children Must be Vaccinated.—To prevent further spread of smallpox, Dr. Robert C. J. Meyer, commissioner of health of Moline, has ordered that those pupils of the Garfield school who can not show certificates of examination must be vaccinated.

Diphtheria.—The board of education of Marseilles has ordered the schools of that city to be closed for an indefinite period on account of diphtheria. Sunday school meetings and other gatherings have been prohibited, and a strict quarantine has been established at the infected points.

Will Not Permit Names in Paper.—At a regular meeting of the Decatur Medical Society, September 25, it was decided that the names of members should not be mentioned in connection with medical matters in the daily press and that, if such notice should appear, the physician in question would be requested to explain at the next meeting of the society.

Epileptics' Home.—Dr. George A. Zeller, superintendent of the Illinois Hospital for the Incurable Insane, Bartonville, in a paper to be read before the State Conference of Charities, recommends the transformation of the Soldiers Orphans' Home at Normal into a hospital for epileptics. There are, he says, 6,000 epileptics in the state; of these 1,400 now receive aid in some form, and the need for such an institution is urgent.

Conference of Charities.—The eleventh annual State Conference of Charities will be held in Chicago, October 24, 25 and 26. The meeting of October 24 will be held in the Sherman House, that of October 25 at Hull House, and the evening conference at Chicago Commons. The morning session of October 26 will be held at the Abraham Lincoln Center, Oakwood Boulevard and Langley Avenue, and the afternoon conference at the South Park Club house.

Chicago.

Deaths of the Week.—For the week ended October 6, 566 deaths were reported, equivalent to an annual mortality of 14.40 per 1,000. The deaths numbered 28 more than for the preceding week, and 94 more than for the corresponding week of 1905. Acute intestinal diseases still lead the death causes with 103 deaths, followed by heart disease, with 61; consumption, with 55; violence, including suicide, with 40, and nephritis, with 27. The principal increases in death causes were from heart disease and pneumonia.

September Mortality.—During September 2,327 deaths were reported, equivalent to an annual mortality rate of 13.81 per 1,000. During the previous month there were 2,487 deaths reported, and during September, 1905, 2,101, equivalent to annual mortality rates of 14.29 and 12.84 per 1,000, respectively. Of the decedents 598 were under one year of age, and 401 over 60 years of age. The chief causes of death were: Acute intestinal diseases, 470; consumption, 253; Bright's disease, 180; violence and heart disease, each 161, and pneumonia, 152.

Personal.—Dr. Anders Doe, one of the delegates of the Norwegian National League at the coronation of the king of Norway, has returned after an absence of four months.——Dr.

Arnold P. Gilmore is reported as being seriously ill with nephritis.——Dr. Sarah Hackett Stevenson, who was stricken with paralysis two years ago, has been taken to St. Elizabeth's Hospital.——Dr. Alfred Schalek has been appointed professor of dermatology and genitourinary diseases in the Medical College of the University of Nebraska, Omaha, and has moved to that city.

Wertheim in Chicago.—Dr. Ernst Wertheim, professor of gynecology in the University of Vienna, is spending a week in Chicago as the guest of the Chicago Gynecological Society, and has given clinics at the Postgraduate Hospital and the Presbyterian Hospital. He has been entertained by Dr. Gustav Kolischer at a dinner at the Chicago Beach Hotel and by Dr. Franklin H. Martin at a luncheon at the Union League Club, and a banquet was given in his honor, October 10, by the Chicago Gynecological Society, at the close of which the guest of honor read a paper before a joint meeting of the Chicago Gynecological Society and the Chicago Medical Society on "Radical Abdominal Operation in Carcinoma of the Cervix Uteri."

INDIANA.

City Death Rates.—The report of the State Board of Health for August shows the following annual death rates per 1,000 for Indiana cities: Terre Haute, 23.4; South Bend, 20.3; Indianapolis, 16.7; Fort Wayne, 15.4, and Evansville, 15.3.

Hospital News.—The contract for building the Good Samaritan Hospital, Vincennes, has been let for $24,300, the building to be completed on or before July 20 next.——N. O. Nelson, St. Louis, has purchased a residence and six acres of ground at Dublin, on which he will establish a home and sanatorium.——It is the intention of the Sisters of St. Francis to build a hospital at Logansport with a capacity of 100 patients, and to cost between $60,000 and $70,000.——The city council of Richmond has appropriated $6,000 toward the maintenance of the Reid Memorial Hospital.

Test Case to be Made.—As a first step toward testing the legal rights of the Indianapolis board of health to make a contract with the Indiana Medical College, the School of Medicine of Purdue University, for the exclusive privilege of holding clinics at the Indianapolis City Hospital, Drs. Horace R. Allen and Frank F. Hutchins on September 27 made formal demand on Dr. Norman E. Jobse, superintendent of the hospital, for the privilege of admitting students of the new State College of Physicians and Surgeons to the hospital and of lecturing to them there. The demand was denied by Dr. Jobse.

Personal.—Dr. Lawson E. Bracken, Greenfield, has been appointed secretary of the local board of health, vice the late Dr. Frank W. Selman.——Dr. Henry O. Wells, Fort Wayne, has been made medical director and medical manager of the Koonse sanitarium.——Dr. R. B. Brown New Albany, has been appointed interne in the Illinois Central Hospital, Paducah, Ky.——Dr. and Mrs. Joseph C. McClurkin, Evansville, have returned from Europe.——Dr. Lindsey L. Whitesides, Franklin, is reported to be critically ill in Los Angeles.——Dr. Rebecca Parish, Logansport, has left for Seattle, whence she sails, October 11, for Manila, to take charge of the free dispensary of the Methodist Episcopal church there.

Communicable Diseases.—The South Bend board of health has been given full power and authority to use every means available to stamp out smallpox in the city, the occasion of this action being the appearance of a case of the disease.——As a result of analyses of water drawn from three public wells in Mitchell, typhoid germs have been found in two. More than 20 cases of typhoid fever have been officially reported to the local board of health.——On account of the prevalence of diphtheria in Marion, all of the schools south of Eighteenth Street were ordered closed September 20 for an indefinite period. Church services and all public gatherings in the territory were also interdicted.——School No. 8 and the Missisinewa school, in Center Township, and School No. 2, Fairmount, Grant Township, have been closed on account of diphtheria.——Several cases of smallpox are reported in Brazil.

Brother Uses Certificate.—Dr. George L. Dickerson, Terre Haute, has been summoned, it is reported, to appear before the Indiana Board of Medical Registration and Examination to show cause why his license should not be revoked. It is alleged that he lent his diploma and certificate to his brother, Robert J. Dickerson, who resembles him closely in dress and appearance, for the purpose of assisting him in the fraudulent practice of medicine in Logansport. R. J. Dickerson was fined $5 and costs in the Cass County Circuit Court recently for practicing medicine without a license, the prosecution being instituted by the Cass County Medical Society. Dr. Dickerson replies to the charge, stating that he and his brother took advantage of the state law which permits an undergraduate medical student to practice medicine under the immediate direction and supervision of a regular practitioner, and denies that any fraud was intended.

LOUISIANA.

Hospital Site Purchased.—The Sisters of the Incarnate Word of Galveston have purchased four acres of land at Lake Charles, on which a hospital to cost $30,000 will be erected.

State Board in Its New Home.—The State Board of Health has moved to its new offices in the Hibernian building, New Orleans. The suite consists of five rooms, including separate offices for the president and secretary of the board.

Low Mortality.—The low mortality of New Orleans for the week ended September 22 is the lowest on record of the city, being equivalent to an annual rate of 13.89 per 1,000 for the entire population, or 11.25 per 1,000 for the whites.

Want Medical College.—At a meeting of the physicians of Shreveport, September 20, a committee was appointed to devise means for raising $30,000, to be used in the erection of a building for a medical branch of the Louisiana State University, Baton Rouge. The endeavor is to have the medical college established in connection with the State Charity Hospital, Shreveport.

New Health Board Takes Charge.—The New Orleans city board of health, consisting of Drs. William T. O'Reilly, William H. Robin, William A. Gillaspie, Oliver F. Ernst and Mr. A. T. Wainwright, assumed charge of health affairs September 11. The new board elected Dr. O'Reilly chairman and health officer, and Dr. Sidney L. Theard, secretary-treasurer and sanitary officer.

Quarantine Fees Reduced.—The State Board of Health, at its meeting September 11, made important changes in the quarantine regulations, reducing the cost of the inspection and fumigation service at quarantine stations. The new schedule of fees reduces the former inspection fees 33 1/3 per cent. and the fumigation fees 14 per cent., as compared with the charges now in force.

New Iberia Free.—The president of the State Board of Health on September 5 declared New Iberia free from yellow fever, 20 days having passed since the first and only case was discovered, without the development of any other infection. Under the direction of President Irion, every store and public dwelling in the place has been fumigated. The citizens of New Iberia presented President Irion and his assistant, Dr. Mayer, with umbrellas in testimony of the appreciation of the work.

Tuberculosis and Smallpox.—The State Board of Health has sent circulars to each of the 1,535 practicing physicians in Louisiana and to the various parish health officers, asking their coöperation in checking what is termed "an alarming increase of tuberculosis" and an "alarming prevalence of variola," and enclosing blanks for statistics on these points. The law making it a punishable offense for a physician to fail to report the statistics of births and deaths to the health officers of his parish, which was enacted in 1900, has never been systematically enforced.

MAINE.

Back to Panama.—Dr. Ernest Wheeler, Augusta, who has been visiting at his old home in Maine, has left for New York en route to Colon, Panama, to resume his work there.

Timely Bulletin.—The State Board of Health of Maine has issued a circular on "Typhoid Fever, Its Prevention and Restriction," and "Formaldehyd Disinfection, a New Process." In the latter it advocates the use of formaldehyd and permanganate of potash, as recommended by the Illinois State Board of Health.

Briggs Sentenced.—Dr. William H. H. Briggs, Bangor, who was arrested March 2 for manslaughter, charged with having performed a criminal operation, pleaded not guilty, and was released under $2,000 bonds, is reported to have been found guilty of manslaughter by a jury at Bangor September 3, and sentenced to serve three years at hard labor in the state penitentiary.

Military Surgeons Organize.—At the suggestion of Major Edwin M. Fuller, Bath, the Association of Military Surgeons of the State of Maine was organized at Augusta, August 16, with the object of mutual improvement of its members and keeping them in touch with the medical departments of the national guards of other states and with the regular establishment. The following officers were elected: President, Major Edwin M. Fuller, Bath; vice-president, Col. James B.

O'Neill, Portland; secretary and treasurer, Lieut. (j. g.) George H. Turner, Jr., Portland, and executive committee, the president, Capt. Gilbert M. Elliott, Brunswick; J. Frederick Hill, Waterville. It is planned to hold two meetings each year, one in the summer while the regiments are in camp, and the other in midwinter at some central point.

MARYLAND.

Public School Closed.—The public school of East Newmarket has been closed by the health officer on account of the death of one pupil from diphtheria.

County Society Meeting.—The Allegany County Medical Society held its annual meeting at Cumberland, October 2. The following officers were elected: President, Dr. S. A. Boucher, Barton; vice-president, Dr. George L. Broadup, Cumberland; secretary, Dr. William R. Faard, Cumberland; treasurer, Dr. E. B. Claybrook, Cumberland, and censor, Dr. Emmett L. Jones, Cumberland. The next annual meeting will be held at Frostburg.

State Sanatorium.—Dr. H. Warren Buckler, Baltimore, has gone to Western Maryland to seek a site for a sanatorium for consumptives to be built and maintained by the state. At least 100 acres will be required, at an elevation of 1,500 feet, with abundant water supply. The plan proposed is for an administration building, a dining room to accommodate 100 to 150 patients, a kitchen with sleeping rooms above it for employés, and separate pavilions for the patients, the whole to cost from $80,000 to $85,000.

Baltimore.

Had Tonsils Removed.—Dr. Lewellys F. Barker returned from Massachusetts October 2. While he was in the North he had his tonsils removed.

Book Presentation.—William A. Marburg, Baltimore, on the suggestion of Dr. William Osler, has presented Johns Hopkins Medical School with a valuable collection of medical books, many of which are rare specimens.

Section Officers.—At a meeting of the section on clinical medicine and surgery of the Medical and Chirurgical Faculty of Maryland, October 5, Dr. C. Urban Smith was elected chairman, and Dr. Harvey G. Beck, secretary.

Herter Foundation Lectures.—The third course of lectures on the Herter foundation was delivered by Sir Almroth E. Wright, M.D., F.R.S., late professor of pathology in the Army Medical School, Netley, and pathologist to the St. Mary's Hospital, London. The subject of the lecture was "The Therapeutic Inoculation of Bacterial Vaccines and Its Application in Connection with Bacterial Disease."

Personal.—Dr. George W. Mitchell has returned from Europe.—Dr. J. Albert Chatard has returned from abroad.—Dr. J. Hall Pleasants has returned after several months abroad. He has recovered from his attack of typhoid fever.—Dr. Robert E. Coker has resigned the Adam T. Bruce fellowship in biology in Johns Hopkins University, having been appointed by the Peruvian government to take charge of the work in connection with the marine fisheries in Peru.—Dr. Frank J. Kirby is ill with scarlet fever.

MASSACHUSETTS.

Typhoid Fever at Everitt.—An epidemic of typhoid fever at Everitt is giving the city and state boards of health considerable anxiety. Within the past two weeks 31 cases have been reported, with 3 deaths. The disease is confined to the territory lying north of Ferry Street or Glendale Square.

Crusade Against Uncleanness.—The Massachusetts Board of Health, after finishing its active crusade against unclean dairies, foul icecream manufactories and unfit meat supplies in the various cities and towns of the state, has entered on a study of the bakeries and found 247 "distinctly bad," 235 "not especially bad," 41 "satisfactory," and only 13 "worthy of special commendation."

Nurses Demonstrate Work.—The graduation of a class of six from the Training School for Nurses of the Boston Children's Hospital was made the occasion of a novel demonstration of their work at Jordan Hall. The demonstration included giving a bath to a patient, preparation for an operation, application of various splints and bandages and the proper method of preparing an infant's food.

Personal.—Dr. C. Clarke Towle has been appointed city physician of Somerville, vice Dr. Alvah B. Dearborn, deceased.—Dr. John H. Bannon, Lawrence, has resigned as a member of the school board and as one of the ward physicians of that city to accept a position as school physician.—Dr. David Wagner, Springfield, is recovering from an operation for appendicitis, performed September 22.

Ether Day.—The sixtieth anniversary of the performance of the first operation under ether will be celebrated at the Massachusetts General Hospital, October 16. This historic event is editorially referred to in this issue. The hospital authorities have undertaken to keep "Ether Day" on October 16 every year. The exercises at the hospital on Tuesday next will consist of a few reminiscent remarks in the old amphitheater by one of the staff. It is hoped also that one of the physicians who witnessed the first operation in 1846 will be present.

Medical Inspectors Appointed.—The following 15 physicians have been appointed by the board of health of Worcester for medical inspectors in the public schools: Drs. Philip H. Cook, S. Alphonse Daudelin, George E. Deering, William E. Denning, George E. Emery, Timothy J. Foley, William E. Langlois, Edwin R. Leib, Menick Lincoln, Arthur W. Marsh, Thomas F. Kenny, John McGillicuddy, George F. O'Day, Charles B. Stevens and George O. Ward.—Drs. Dennis M. Ryan, Worthington W. Miner, George F. A. Spencer and Adolphe A. Auger have been appointed school physicians for Ware.

Councilors' Meeting.—The fall meeting of the council of the Massachusetts Medical Society was held October 3, Dr. George W. Gay, Boston, president, in the chair. The secretary, Dr. Francis W. Goss, Roxbury, reported that 243 fellows had been admitted during the past year and 41 members had deceased. Delegates were appointed to the state medical societies of Pennsylvania, New York and Rhode Island. As requested by the American Medical Association, the following committee of three was appointed to act with the Council on Medical Education of that Association: Drs. George A. Sears, Harold C. Ernst and Horace D. Arnold, all of Boston. The committee was instructed to act in connection with the American Medical Association, the Massachusetts Medical Society and the State Board of Registration and Medicine. A committee of five, of which Dr. Edwin B. Harvey of Westboro, secretary of the Massachusetts Board of Registration and Medicine, is chairman, was appointed to revise the by-laws of the society to conform to the latest medical practice and to report at the February meeting. By unanimous consent, Dr. Beverly MacMonagle, San Francisco, was elected an honorary member of the society.

Health Report.—The annual report of the Boston board of health for 1905-1906 shows a death rate of 18.49 per 1,000. Of the 11,007 deaths infectious diseases caused 2,161; diphtheria, 132; scarlet fever, 44; typhoid fever, 117; measles, 54, and consumption, 1,224. The deaths of children under 5 numbered 3,024, 81 less than the previous year. Nearly 15,000 nuisances were investigated and abated. The medical inspectors of schools examined 16,961 pupils and detected 312 infectious diseases, 1,342 oral and respiratory diseases, 146 diseases of the ear, 653 of the eye, 4,390 of the skin, and 3,501 cases of miscellaneous disease. A table of mortality statistics for consumption, diphtheria, typhoid fever and scarlet fever, beginning with 1840, shows that in the last 30 years the rate of deaths per 10,000 of population has decreased for consumption from 36.65 to 20.56; for diphtheria, from 20.81 to 2.22, and for typhoid fever, from 4.19 to 1.96. The mortality of scarlet fever, too, has greatly decreased, but the fact most strikingly brought out by the table in regard to this disease are cycles of seven to nine years. There is, therefore, strong probability that within the next year or two this disease will again be much more frequent, for another increase is due.

MICHIGAN.

Will Prosecute Illegal Practitioners.—The State Board of Registration is about to take active measures to prosecute physicians who are practicing without being registered, and others legally registered but who are guilty of unprofessional conduct.

Bust Presented.—The University of Michigan has been presented with a bust of the late Dr. Pitcher, a member of the first board of registration from 1837 to 1852, professor emeritus of the institutes of medicine and obstetrics from 1851 to 1872. Dr. Pitcher was also mayor of Detroit from 1840 to 1842. The bust will be placed in the new medical building.

Epidemic Diseases.—Three Oaks is reported to be suffering from an epidemic of typhoid fever.—Rapid City reports 8 cases of diphtheria, with 2 deaths. The schools and places of public meeting have been closed.—Croton, Newaygo County, is reported to be suffering from a severe epidemic of typhoid fever.—Typhoid fever is reported to be on the increase at Kalamazoo.

August Mortality.—During August 3,237 deaths were reported in the state, equivalent to an annual death rate of 14.3 per 1,000. The total deaths were 458 more than July, and 440 more than August, 1905. Of the decedents, 868 were infants under one year of age, 329 children between 1 and 4 years of age, and 772 individuals 65 years of age and over. The important causes of death were: Diarrheal diseases, 548; violence, 266; tuberculosis, 224; cancer, 150; pneumonia, 63; typhoid fever, 45; whooping cough, 43; meningitis, 40; diphtheria, 29; scarlet fever, 12, and measles, 8.

Hospital News.—Plans are being prepared for the addition to the General Hospital, Sault Ste. Marie, that will almost double its capacity. It now has accommodation for about 70 patients.——The proposed hospital for Ludington now seems to be assured. The association which has its establishment in charge is known as the Mason Hospital Association, with membership dues of $5 annually. Several sites have been suggested, but no decision as to the location has yet been made.——The Benton Harbor hospital committee met October 1 to award the contract for the erection of the new hospital.

Personal.—Dr. Guy M. Dunning, Lansing, and Dr. Raymond D. Sleight, Battle Creek, start for Vienna, October 16.——Dr. Arthur W. Seldmore, Three Rivers, is reported to be seriously ill.——Dr. Mortimer Willson, Port Huron, was thrown from his buggy September 11, and sustained severe cuts of the face and hands.——Dr. Orson Millard, Flint, has been elected president of the medical section of the National Fraternal Congress.——Dr. Leon M. Gillette, Battle Creek, is reported to be seriously ill at his home.——Dr. George P. McNaughton, Sault Ste. Marie, has resigned as health officer and Dr. A. Harvey Miller has been appointed in his stead.——Dr. Peter J. Livingston, Caro, was tendered a banquet by the Caro St. Andrew's Society, September 25. Dr. Livingston is about to leave Caro and locate in Detroit.

Dr. McCormack's Meetings in Michigan.—The council of the Michigan State Medical Society has arranged a series of 30 meetings throughout the state, at which Dr. J. N. McCormack of Bowling Green, Ky., will make addresses. Dr. C. B. Stockwell, president of the society, has sent out a letter, from which we quote:

> Dr. McCormack has made a similar itinerary in a number of other states, speaking before audiences composed of both the profession and the laity. He is endeavoring to make plain to the people that an underpaid profession is as much to their disadvantage as to the doctors'. He discusses the evils of drug-store prescribing, the "patent medicine" evil, venereal prophylaxis, sanitary questions, etc. He shows the laity that the profession has no interest that at the same time is not the interest of the public. Dr. McCormack is a splendid speaker, and has that happy personality which at once assures interest and attention.
>
> Will you not make a special effort both to attend one or more of these meetings, and also to urge the influential people of your clientele to be present? The attendance of the ladies is especially desired. Impress on them that it is not an ordinary "medical meeting."

The arrangements for the meetings are as follows:

DETROIT, MONDAY, OCTOBER 15. Public meeting in Museum of Art, 8:15 p. m.

ANN ARBOR, TUESDAY, OCTOBER 16. Meeting for Physicians, New Medical Building, 3 p. m. Public meeting, Sarah Caswell Angell Hall, 8 p. m.

JACKSON, WEDNESDAY, OCTOBER 17. Meeting for Profession, Unitarian Church, 2:30 p. m. Public meeting, Unitarian Church 7:30 p. m.

LANSING, THURSDAY, OCTOBER 18. Meeting for Profession, City Hall, 2:30 p. m. Public meeting, City Hall, 8 p. m.

CHARLOTTE, FRIDAY, OCTOBER 19. Meeting for Profession, Court House, 4 p. m. Public meeting, Court House, 7:30 p. m.

BATTLE CREEK, SATURDAY, OCTOBER 20. Meeting for Profession, Knights of Columbus Hall, 3 p. m. Public meeting, Congregational Church, 8 p. m.

KALAMAZOO, MONDAY, OCTOBER 22. Meeting for Profession, Academy of Medicine Rooms, Public Library, 2 p. m. Public meeting in evening, time and place to be announced.

BENTON HARBOR, TUESDAY, OCTOBER 23. Public meeting, Armory, 7:30 p. m.

HOLLAND, WEDNESDAY, OCTOBER 24. Ottawa County Society meeting in afternoon, to which all physicians are invited. Public meeting in Winant Chapel, Hope College, 7:30 p. m.

GRAND RAPIDS, THURSDAY, OCTOBER 25. Public meeting in Auditorium, Ryerson Library, 8 p. m.

GREENVILLE, FRIDAY, OCTOBER 26. Eleventh District meeting at 10:30 and 1:30 p. m. Scientific program and an address by Dr. McCormack. All physicians are invited. Public meeting, Congregational Church, 8 p. m.

BIG RAPIDS, SATURDAY, OCTOBER 27. Public meeting, Court House, 7:30 p. m.

CADILLAC, MONDAY, OCTOBER 29. Arrangements pending. Due notice will be given.

UPPER PENINSULA, TUESDAY, OCTOBER 30, TO THURSDAY, NOVEMBER 1, INCLUSIVE. The arrangements are being made and due notice will be given of the places and hours.

BAY CITY, FRIDAY, NOVEMBER 2. Public evening meeting under the auspices of the Bay County Society. Time and place to be announced.

SAGINAW, SATURDAY, NOVEMBER 3. Meeting for Profession, City Hall, 3:30 p. m. Public meeting, City Hall, 8 p. m.

ALMA, MONDAY, NOVEMBER 5. Public meeting, Alma Sanitarium, 8:30 p. m.

FLINT, TUESDAY, NOVEMBER 6. Sixth District meeting at Dryden Hall. Scientific program with an address by Dr. McCormack. This will be followed by a dinner. All physicians are invited. Public meeting, Stone's Opera House, 8 p. m.

ST. JOHNS, WEDNESDAY, NOVEMBER 7. Arrangements pending. Due notice will be given.

LAPEER, THURSDAY, NOVEMBER 8. Public meeting, Opera House, 8 p. m.

PORT HURON, FRIDAY, NOVEMBER 9. Meeting of the Seventh District Society with public meeting in the evening. Due notice of the arrangements will be given.

ADRIAN, SATURDAY, NOVEMBER 10. Public meeting, Baptist Church, 8 p. m.

NEBRASKA.

Diphtheria.—Diphtheria is said to be present in Beatrice in malignant form. A number of cases are under quarantine and several deaths have occurred.

Alumni Banquet.—The Medical Alumni of the University of Nebraska held their fourth annual banquet in Omaha, September 18. Dr. Matthew G. Tinley, Council Bluffs, presided as toastmaster.

Personal.—Dr. S. N. Richardson is reported to be seriously ill at Elgin, Neb.——The board of councilors of the Nebraska State Medical Association has elected Dr. Francis A. Long, Madison, president, vice Dr. James L. Greene, removed from the state.

Hospital News.—By the will of the late Edward Rosewater, Omaha, a bequest is made to the Wise Memorial Hospital.——Drs. Simon C. Beede and Harry E. Burdick are erecting a hospital at David City to accommodate 20 patients.——A new cottage at the Norfolk Hospital for the Insane has been completed and accepted by the authorities.

NEW YORK.

New York City.

Hawthorn Cancer Home.—This institution, devoted to the care of the cancerous poor, has been given a building for the entertainment of visitors and guests by George H. F. Schrader.

Coroners Busy.—There were 532 deaths reported to the coroners during September. Of these 334 could be accounted for by natural causes, 60 were due to falling timbers, 41 were homicides and 26 suicides.

Personal.—Dr. William S. Bainbridge arrived home on the *Campania* October 5.——Dr. William J. Burns of Sea Cliff, Long Island, was thrown from his automobile when it skidded and struck a telegraph pole.

New Strauss Milk Laboratory.—The plans have been filed for a new laboratory building which is to be erected on East Thirtieth Street. The building will be 35 feet front and 85 feet deep and will cost $30,000.

Typhoid Among Bellevue Staff.—It is reported that three members of the house staff of this hospital are ill with typhoid fever contracted from attending the unusually large number of typhoid patients in the hospital at present.

For Hebrew Charities.—The late Adolph Herrmann has bequeathed $5,000 to Mount Sinai Hospital, $2,500 to the Montefiore Home, $1,000 to the Hebrew Orphan Asylum, and $500 to the Mount Sinai Hospital Training School for Nurses.

Hospital Officers Elected.—At the annual meeting of the Long Island Throat Hospital and Eye Infirmary, Brooklyn, Dr. Charles T. Schondelmeier was re-elected president. The report of the treasurer showed a balance in the treasury of $880.

Dairies Will be Inspected.—Health Commissioner Darlington has begun a tour of inspection among the creameries of this state. After a similar trip last year milk from insanitary dairies was seized by the inspectors, and it is believed that this trip will be followed by still further improvement.

Decreased Registration at Columbia.—The College of Physicians and Surgeons of Columbia University shows a decrease in the number of students for the present year. Last year there were 405 registrations as against 331 for this year. This decrease is accounted for by the fact that the entrance requirements have been made more difficult.

Museum of Surgical Instruments.—At the regular meeting of the Academy of Medicine, October 4, Dr. D. Bryson Delavan presented to the academy a historical collection of laryngologic instruments to which he said he expected to add from time to time. It is hoped that this gift will be the nucleus for a collection of instruments in all fields of surgery, and it was shown that such a museum would be highly useful to the profession.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended September 29, 367 cases of tuber-

culosis, with 151 deaths; 137 cases of diphtheria, with 12 deaths; 114 cases of typhoid fever, with 10 deaths; 61 cases of measles, with 5 deaths; 41 cases of scarlet fever, with 3 deaths; 35 cases of whooping-cough, with 8 deaths; 15 cases of cerebrospinal meningitis, with 12 deaths; 12 cases of varicella and 1 case of smallpox, a total of 783 cases, with 210 deaths.

Illiterates in Rockland County.—According to the state educational departments report there are 2,019 illiterates in Rockland County's population of 30,638. Of the 11,866 voters 1,129 are illiterates. Among the native whites there are 350; among the native whites of foreign parents, 81, and among the foreign born whites, 1,272.

NORTH CAROLINA.

New Hospital.—Mercy Hospital, Charlotte, has been incorporated under Roman Catholic auspices. The hospital is to be large and elaborately appointed.

Diphtheria.—A severe type of diphtheria is reported to be prevalent in Lenoir County. A joint meeting of the authorities and the medical officers of Kinston was held September 21 to institute systematic measures against the spread of the disease.

Honor System Established.—Wake Forest College has instituted the "honor system" as the disciplinary method of the college in the future. F. L. Wilson, Yancey County, represents the medical department of the college on the committee of administration.

Personal.—Dr. A. J. Crowell, Charlotte, professor of rectal diseases in the Medical College of North Carolina, has recently been tendered and declined a chair in a Texas medical college. ——Dr. John A. Williams, formerly of Reedsville, has removed to Greensboro.

In Sanitarium.—Dr. Joseph B. Matthews, Greensboro, who was convicted of the murder of his wife in December last and sentenced to 20 years in the penitentiary, is undergoing treatment in a sanitarium at Baltimore for the cure of the drug habit, which was claimed to have been the cause of the murder. Thus far there has been no official notice of the revocation of his license by the state board.

Congressional Contest.—The physicians of the state are taking much interest in the campaign for congress in the ninth district. One candidate is the Hon. E. Yates Webb, who seeks re-election. Mr. Webb is the author of the pure drug bill, introduced in the last session of Congress. After the bill had been defeated, at the last moment, he secured its insertion as a section of the pure food measure, which later became a law. His opponent is Dr. Frank Roberts, Marshall.

Pure Drug Bill.—It is proposed to enact as a state law the pure drug bill, introduced by Congressman Webb. At present the pure food law only restricts the "patent-medicine" manufacturers outside the state from shipping goods into the state unless the labels show in detail the percentage of morphin, alcohol, etc. It is apparent, however, that the publicity clause may be evaded by many firms, which would pack and label in the state goods intended for sale in the state. The enactment of an "open formula" statute in the state would accomplish much.

PENNSYLVANIA.

Personal.—Drs. Edith Conser and Alice Stuffan have been appointed for duty in the female department of the State Hospital for the Insane, Norristown.——Dr. Wallace W. Dill, Pottstown, has been appointed physician of the poor, to fill an unexpired term.——Dr. Andrew B. Gloninger, Lebanon, sailed for home from France September 29.——Dr. Frank Keagy, Altoona, is seriously ill with typhoid fever at Atlantic City. ——Dr. James C. Dunn, Pittsburg, is reported to be dangerously ill at his home.——Dr. Israel Cleaver was re-elected secretary of the Reading Hospital Association, October 1.

State Wins Vaccination Fight.—In an opinion handed down by Judge W. Rush Gillan of Chambersburg, October 8, in the mandamus proceedings brought by Attorney-General Carson against the school officials of the Waynesboro grammar school, he sustains the vaccination law, excluding from the schools those who are unable to present proper certificates of successful vaccination. He reviewed the laws concerning vaccination, and directs that this section of the health law shall be enforced by the directors and not by the teachers, taking the position that the directors, being elected by the people, are the responsible officials and not the teachers, who are elected by the directors.

Philadelphia.

Medical Faculty Change.—The medical department of the University of Pennsylvania has established a department of experimental surgery, and Dr. J. E. Sweet, formerly connected with the laboratory of hygiene, and more recently with the Rockefeller Institute, has been placed in charge.

Personal.—Dr. Addinell Hewson has resigned his position as assistant professor of anatomy in Jefferson Medical College. ——St. Agnes' Hospital has recently created a department of orthopedic surgery and Dr. H. Augustus Wilson, professor of orthopedic surgery in Jefferson Medical College, has been appointed chief of the new department.

Free Bed for Hospital.—Employés of the Bell Telephone Company of Philadelphia and the Delaware and Atlantic Telegraph and Telephone Company have endowed a free bed in the Pennsylvania Hospital in memory of the late Theodore Spencer, who was vice-president and general manger and director of the companies. A memorial tablet wil be placed in the central hall of the hospital.

Conference of Anti-Vaccinationists.—A state conference of the opponents of compulsory vaccination was held in this city October 3 and 4. About 80 delegates were present. The object of the meeting is to take political or other action to prevent the use of virus; to perfect plans to nominate candidates for governor and the legislature favorable to the repeal of the twelfth section of the act of June 18, 1895, which provides for the exclusion of unvaccinated children from all schools. A resolution was passed condemning vaccination in toto, but more especialy that of sick children.

Health Report.—The total number of deaths reported for the week ended October 6 aggregated 402. This is a decrease of 37 from the number reported last week, and a decrease of two from the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 9; diphtheria, 9; cancer, 18; heart disease, 51; Bright's disease, 41; accidents, 16; pertussis, 7; consumption, 45; apoplexy, 12; acute respiratory disease, 38; enteritis, 26; suicide, 2, and marasmus, 9. There were 183 cases of contagious disease reported, with 19 deaths, as compared with 180 cases and 30 deaths reported in the preceding week.

Dr. Wood Resigns.—Dr. Horatio C. Wood has resigned his position as professor of materia medica, pharmacy and general therapeutics in the medical department of the University of Pennsylvania, on account of ill-health. Dr. Wood has been connected with the university since 1862, when he was graduated from the medical school. He has held the chair of materia medica, pharmacy and general therapeutics since 1876. He was a visiting physician to the Philadelphia Hospital from 1872 to 1887, and to the University Hospital since 1870. His resignation was accepted by the board of trustees, and he was immediately elected, by unanimous vote, as emeritus professor of materia medica, pharmacy and general therapeutics.

Hospital Reports.—During September the Germantown Hospital admitted 103 patients and discharged 107, the total remaining October 1 being 37. There was 1,253 cases treated in the dispensary, as follows: Medical and surgical, 865; eye, 136; ear, 67; throat, 56; nose, 77; nervous, 52.——The Polyclinic Hospital admitted during the month 98 patients and discharged 83; 378 new patients were treated in the dispensary, to whom a total of 1,462 visits were made.——The Methodist Hospital reports for September as follows: Patients admitted to the house, 74; treated in the dispensary: medical, 44; surgical, 455; gynecologic, 11; eye, 96; ear, 14; nose and throat, 30; skin, 46; orthopedic, 6, and pediatric, 20; total patients treated, 722; total visits to the dispensary, 3,234.——The report of the Howard Hospital for September shows that 781 new dispensary patients were treated and that 327 prescriptions were prepared.——The Samaritan Hospital admitted 112 patients to the wards and treated 2,263 patients in the different dispensaries.

Newspaper Advertising.—A committee of the Philadelphia County Medical Society prepared the following resolutions to be acted on October 11:

1. *Resolved*, That the publication in the lay press of the description of operations, new treatment, and allied medical matters in connection with the name of the physician be condemned by the society, and that the physicians of the society, in order to prevent such publication, make such representations to the superintendents or other officers of the hospital with which they are connected, as will, so far as possible, prevent interns, nurses, employés or friends from giving information to reporters.

2. *Resolved*, That the society try to prevent reports of the papers read at its meetings from being publicly mentioned unless such publication be conducive to the public welfare. The society shall instruct its secretary or reporter to give to the press a censored report which shall always be anonymous so far as the authorship of the papers is concerned.

3. *Resolved*, That the society condemn the publication of medical interviews in connection with the names of physicians, excepting medical interviews relating to municipal sanitation and other matters of public welfare.

4. *Resolved*, That copies of all articles appearing in the press of Philadelphia relating to regular physicians of that city shall be placed in a scrap book by the assistant secretary for the inspection of members. A member whose name appears therein shall have the privilege of attaching thereto a written explanation.

5. *Resolved*, That copies of these resolutions be printed in THE JOURNAL of the American Medical Association, the *Weekly Roster* and *American Medicine*.

Inspection of City's Water Supply.—During the week the city's water commission inspected the city's water supply from Pottsville to Philadelphia. The report of the commission shows that millions of gallons of sewage from towns up the state and tons of coal dust are daily being poured into the waters of the Schuylkill, which is the main source of the city's water supply. Reading, with a population of 97,000 inhabitants, empties 2,000,000 gallons of sewage into the river daily, and Pottsville, Pottstown, Phœnixville, Tamaqua, Spring City and other towns bordering the stream empty their polluted sewage into the river. Of all the towns indiscriminately emptying their sewage into the river only one, Reading, is making any effort to abate the nuisance. There a sewage disposal plant is being erected, but it will be six months before it will be finished. The other towns, the commission reports, are indifferent as to the extent to which they contaminate the city's water supply. It was found that the head of the river was fairly black with coal dust. It is estimated that the coal sewage amounts to more than 5,000,000 gallons a day. The examination of the commission was supplementary to the examination which has been going on for some time by engineers and water experts employed by the commission and state authorities. Since the appointment of Dr. Samuel G. Dixon, state commissioner of health, plans have been instituted to prevent the indiscriminate pollution of the city water supply, and a marked improvement has taken place as a result of his efforts.

RHODE ISLAND.

No Dogs at Large.—Hydrophobia is being frequently reported in various parts of Massachusettts, Connecticut and Rhode Island. Woonsocket, R. I., has adopted the regulation that for six months no dog shall be allowed to run at large, whether muzzled or not.

District Society Meeting.—The Woonsocket Medical Society held its first meeting September 20. The following officers were elected: President, Dr. William C. Monroe; vice-president, Ara M. Paine; secretary, Elisha D. Clarke; treasurer, John J. Baxter, and censors, Drs. Joseph T. Roswell, Robert G. Reed and Joseph E. Tanguay.

Personal.—Dr. Richard P. Boucher, Providence, has gone to New York to receive treatment in the Pasteur Institute.——Dr. Joaochino Carella has taken charge of the Italian outpatient ward at the Twin City Hospital, Pawtucket.——Dr. Henry J. Hoye and Jay Perkins, Providence, have been re-elected examining physicians for the State Sanatorium, Wallum Pond.

SOUTH DAKOTA.

Personal.—Dr. Edward F. Dann, Clarke, has been seriously ill at his home.——Dr. Rudolphus D. Jennings, Hot Springs, has been elected governor of the Battle Mountain Sanitarium, vice Dr. A. G. Hull, resigned.——Dr. William S. Bentley has resigned as surgeon of the Soldiers' Home, Hot Springs.

County Hospital.—The commissioners of Brown County have decided to present to the voters of the county the question of building a new county hospital and poor farm. The board is in favor of issuing bonds for $15,000 for the erection of the hospital. The need is apparent, as the present county hospital is not large enough to meet the demands.

VIRGINIA.

New Hospital.—Drs. Stuart N. Michaux, James W. Henson and F. K. T. Warwick have purchased two buildings on the boulevard north of Grove Avenue, Richmond, and are converting them into a hospital and sanitarium, to be known as the William Byrd Hospital.

Physicians May Exceed Speed Limit.—In the police court in Norfolk, September 25, in the case of Dr. Stanley H. Graves, charged with violating the law by running his automobile too fast in that city, it was decided that a physician on an errand of mercy is exempt from speed limit.

Refuses to Make Recommendation.—The Norfolk Medical Society, at a specially called meeting, September 19, refused by a vote of 29 to 25 to recommend any one for health commissioner, holding that any member of the society is fully competent to discharge the duties of that office.

Personal.—Dr. Tazewell Bradley, Roxbury, suffered a severe cerebral hemorrhage in Richmond, September 20, and is reported to be in a critical condition.——Dr. Fayette A Sinclair, Hampton, who has been one of the physicians at the National Soldiers' Home for some time, has resigned in order to take up private practice.——Dr. Robert E. Wine, Brentsville, was taken to Washington, September 22, and was operated on the next day for appendicitis.——Dr. John N. De Shazo, Center Cross, is rapidly improving after serious illness with typhoid fever.

Colleges Open.—The sixty-ninth session of the Medical College of Virginia, Richmond, opened September 19. Dr. Christopher Tompkins delivered the opening address. Dr. Manfred Call has been appointed professor of practice of medicine, vice Dr. Robert F. Williams, resigned; Dr. Clifton M. Miller has been transferred from the chair of anatomy to that of diseases of the nose and throat; Dr. J. Fulmer Bright has been elected professor of anatomy, and Dr. Charles R. Robins, professor of gynecology.——The University College of Medicine, Richmond, opened for its annual session, September 19. Dr. Stuart McGuire delivered the opening address. Dr. W. H. O. McGehee has been elected head of the dental department of the college.

WYOMING.

Typhoid Fever.—Typhoid fever has broken out in Evanston and 7 cases are reported. The city water is said to be responsible.

Hospital to be Established.—Bishop J. J. Keene of the Roman Catholic church is looking for a location for a Sisters' hospital and will, it is expected, decide on Thermopolis.

State Society Meeting.—The eighth annual meeting of the Wyoming State Medical Society was held in Casper, September 24 and 25. The following officers were elected: President, Alfred C. Godfrey, Lander; vice-presidents, T. A. Dean, Casper; Charles E. Stevenson, Sheridan, and G. A. Bristol, Evanston; delegate to the American Medical Association, Dr. Alfred C. Godfrey, Lander, and alternates, Drs. George L. Strader, Cheyenne, and Oliver Chambers, Rock Springs. Dr. George L. Strader, Cheyenne, was re-elected secretary, and A. Francis Hoff, Casper, treasurer. Lander was chosen as the place for the 1907 meeting.

GENERAL.

Yellow Fever and Dengue in Cuba.—According to newspaper reports, during the first week in October three cases of yellow fever were reported in Havana and twelve suspicious cases in which the diagnosis was unconfirmed. Of the latter two were at Guanabacoa, a suburb of Havana. Ten cases of dengue are reported from Havana.

The Jamestown Exhibition.—Passed Assistant Surgeon Rupert Blue of the United States Public Health and Marine-Hospital Service has been appointed sanitary director of the Jamestown Exposition. Dr. Blue has already assumed his duties in connection with the exposition, which will open April, 1907. The United States Public Health and Marine-Hospital Service will have an exhibit in the Government Building representing the scope of the service work, including the marine hospital and quarantine services, the work of the hygienic laboratory and the sanatorium treatment of tuberculosis.

Chess Players Arrange Match for Physicians.—The Tri-State Chess Association, an organization of over 400 players, the majority of whom reside in the central states, is arranging a correspondence match at chess of the doctors versus the laity. It is desired to have physicians from every section of the United States engage in this match. Therefore, every chess loving physician is hereby invited to become a consultant in the case. The match will begin in November. All who will play are urged to send name and address to the president of the association, Dr. F. B. Van Nuys, Lorain, Ohio, stating the number of games they will assume.

Cholera in Manila.—Dr. Victor Heiser, chief quarantine officer, reports that cholera is still prevalent in the Philippines. For the first time since the outbreak began—nearly a year ago—several cases are being found in the same house; but the infection occurs almost simultaneously in all cases, which would indicate that it is due to infected food introduced into the house. A rigid inspection made of the truck farms in and around Manila shows that in spite of the precautions taken there are still a number of gardeners who use liquid human excrement for fertilizing. A number of them were arrested and fined. It seems probable that the outbreaks which occur from time to time in Manila may be attributed to this source. The question of fertilizing vegetables with human excrement

became so acute that the Philippine Commission has taken legislative action and passed a law which makes it a penal offense to use this substance for fertilizing purposes. The two important sections provide:

No farmer, market gardener, or other person or persons shall use any human excreta, excrement, dejecta, or the contents of any water or earth closet, privy, vault, cesspool, latrine, pail, or other receptacle for human feces or urine as a fertilizer for any land on which is grown any article or product intended for human food or human consumption, or allow any human excrement, excreta, or dejecta to be sprinkled or applied in any manner or for any purpose to any crop, product, or vegetable growing on said land.

A fine of not less than $25, nor more than $100, or imprisonment not to exceed six months, or both, shall be imposed on each person found guilty.

It was deemed advisable to modify the outgoing quarantine detention on outgoing vessels. Regular army medical officers were detailed to act as quarantine officers at outgoing ports, which made it possible to inspect many vessels at the port of arrival, thus effecting a considerable reduction in the quarantine detention period. This modification has been much appreciated by the shipping interests and by the provinces, persons living outside of Manila being able thereby to obtain much better freight rates than when full quarantine is imposed. It is hoped that this will have a material effect in relieving the business depression, and at the same time give reasonable security to the provinces against being invaded by cholera through the maritime traffic. The necessity for granting some relief to the shipping interests will be better appreciated when it is remembered that outgoing quarantine has now been imposed continuously for almost one year.

CANADA.

Toronto University Senate Elections.—The following Ontario practitioners have been elected representatives on the senate of Toronto University to represent the graduates in medicine: Dr. Herbert J. Hamilton, Toronto, 1,175 votes; Dr. C. J. C. O. Hastings, Toronto, 826; Dr. Wilbur H. Harris, Toronto, 708; Dr. William Burt, Paris, 625.

New Sanitarium.—Winnipeg, Man., is to have a City Home for Convalescents, conducted by the Women's Hospital Society of that city.——Eastern medical men and a prominent medical man of Winnipeg are said to have purchased 14,000 acres of land in Manitoba, fronting on Lake Manitoba, with the intention of establishing a sanitarium for consumptives.

Medical School News.—The Medical Faculty of Toronto University opened for the 1906-1907 session October 3. Sir Almroth E. Wright, M.D., F.R.S., St. Mary's Hospital, London, Eng., delivered the opening lecture, his subject being "Inoculation with Bacterial Vaccines." The freshman class numbers 179.——It is rumored that the Ontario government will endow a chair of anatomy in the University of Toronto in the near future.——There is an increase in the attendance of medical students at McGill University, Montreal, this year, the total being about 400.

Personal.—Dr. Shirley McMurtry, Montreal, has gone to Japan for two years.——Dr. Goldwin Howland, Toronto, has returned from England, where he was married recently.——Dr. H. A. Stewart, Saskatoon, Sask., has received the offer of the appointment of neuropathologist and lecturer on pathology in the Indiana State Hospital at Indianapolis.——Dr. T. K. Holmes, Chatham, Ont., one of the leading surgeons of western Ontario, narrowly escaped drowning recently, having accidentally fallen into the Thames when returning at night from visiting a patient.——Dr. James Stewart, professor of medicine in McGill University, is suffering from a stroke of paralysis.——Dr. H. M. Church, Montreal, was recently tendered a dinner by the McGill anatomic staff, on the occasion of his approaching marriage.

Ontario Postpones Its Department of Health.—The Ontario government has appointed new members to the Ontario Board of Health. It was thought at one time that the government contemplated creating a new department with a minister of health at its head, but no doubt it was felt that this would be too progressive a move for a little province like Ontario to initiate. The opportunity to lead in this coming reform is, therefore, passed by. The composition of the new board is as follows, only one of the old board receiving recognition: Dr. Charles Sheard, M.H.O., Toronto; Dr. Robinson, M.H.O., Guelph; Dr. Hall, M.H.O., Chatham; Dr. M. I. Beeman, Newburgh; Dr. J. A. S. McCullough, Alliston, and Dr. C. A. Hodgetts. The last mentioned is the present secretary, and will continue to act in that capacity.

FOREIGN.

Death of Patient Does Not Release Physician from Obligation of Professional Secrecy.—This is the recent decision in a case before the courts of Saxony in which a widow summoned her husband's physician to testify in regard to his illness. The higher courts confirmed the decision.

New Insane Hospital in Australia.—Plans have been prepared for a new hospital for the insane to be built near Melbourne, Victoria. The building will contain 124 beds. There will also be a large central kitchen and an administration building. Each ward will contain some single rooms, a dining room and a kitchen, where some of the simpler meals can be prepared. The hospital is intended for the treatment of acute cases which offer hopes of speedy recovery.

Adventuresses Posing as Doctors in Paris Rob Patients.—The cable states that two women have just been arrested in Paris for illegal practice of medicine and for swindling. They rented a business suite of offices and advertised extensively throughout the provinces that they could cure all abdominal troubles without an operation. While the assumed doctor was examining the partly stripped patient, the other woman was rifling the pockets in the clothes left in the adjoining room.

International Trachoma Prize.—As already mentioned, the Hungarian government has offered a prize of $250 for the best work on the etiology of trachoma offered in competition before Dec. 31, 1908. The work can be in English, French, German or Hungarian, and the prize will be awarded at a general session of the Fifteenth International Medical Congress at Budapest, in September, 1909. Published works are eligible if they do not appear before 1907 or 1908. Address Budapest 1, Vár, Belugyministerium.

Neisser to Resume His Syphilis Research on Monkeys.—It is announced that Professor Neisser intends to return to Batavia in November to continue his experiments on mönkeys with syphilis. His previous work with monkeys at Breslau in 1903 and 1904 and in Batavia last year, were all at his own expense, but now he has an appropriation of $25,000 from the government for the work, which has been zealously continued by the two assistants he left behind when he returned. The party still includes Halberstädter and von Prowazek, an authority on protozoa, has joined, and also K. Bruck, formerly of the Institute of Infectious Diseases at Berlin, and Siebert, who takes Baermann's place. The latter leaves to take charge of a large hospital in Sumatra, devoted chiefly to cutaneous and venereal diseases.

The Moritz Souvenir Number of the St. Petersburg. Wochenschrift.—Instead of its usual modest proportions, our St. Petersburg contemporary appears as a journal of 85 pages in its issue for September 20. This is in honor of the seventieth birthday of Dr. E. Moritz of St. Petersburg, the founder of the weekly, 31 years ago, and also founder of the Alexander Hospital. The issue contains 20 thoughtful articles on the action of colored light on the eye, orthostatic albuminuria, treatment of the vicious circle after gastroenterostomy, indications when vision is threatened by pregnancy, surgical treatment of severe cervical and occipital neuralgia, tetanus in the Russian army, phosphorus metabolism, acute pseudo-leukemia, anti-septic action of menstrual blood on ulcus molle, fever with visceral syphilis, etc. The authors include the best known St. Petersburg medical writers. The *Wochenschrift* is the only medical journal published in German in Russia, and it has been a welcome link between the profession in Russia and the outside world.

Quartercentenary of Aberdeen University.—The quartercentenary of this university was celebrated during the last week in September. This is the four-hundredth anniversary of the formal constitution of King's College, which was the original university. The university was founded at the end of the fifteenth century and is the third in point of age in Scotland. It was founded by William Elphinstone, bishop of Aberdeen, and, like all medieval universities, was a Roman Catholic institution. From the very beginning there was not only a faculty but a chair of medicine at Aberdeen, and it is said that this is the oldest in Great Britain. An interesting account of the university is given in the *British Medical Journal*, Sept. 22, 1906, with several excellent illustrations of the university at various periods. The new Mariachal College was opened by King Edward, September 27. Many honorary degrees were conferred. Among those so honored are Drs. Howard A. Kelly, Baltimore, and J. William White, Philadelphia, who received the degree of LL.D. This degree was also conferred on several well-known Canadian physicians.

LONDON LETTER.

(*From Our Regular Correspondent.*)

London, Sept. 15, 1906.

A Recently Discovered African Arrow Poison.

Dr. C. Bolton has communicated to the Royal Society the results of an investigation which he has made of the toxic properties of an arrow poison obtained by Dr. D. Alexander from a medicine house in a pagan town in northern Nigeria. Dr. Alexander observed that the fresh poison is a semifluid, sticky, black substance. It is smeared on sticks and when required for dipping arrows is scraped off and heated. It appears to consist of the juice of a kind of fig, the placenta of which is used in the manufacture of the poison. Dr. Alexander saw a native shot in the abdomen die in twenty-five minutes, apparently from heart failure. Dr. Bolton experimented on cats, rabbits, guinea-pigs and frogs with the poison dissolved in 0.86 per cent. of salt solution. He found that it has a selective action on muscular tissue and that there is no evidence that it has any action on the central or peripheral nervous system. It paralyzes voluntary muscle and produces death by the same action on the heart. It first stimulates the muscular coats of the arteries and thus causes a rise of blood pressure, with the result that the vagus center in the medulla is excited, causing slowing of the heart and a fall in blood pressure. Then the irritability of the heart is greatly increased and soon the vagus fails to hold it in check. The chief factor in maintaining the high blood pressure seems to be the constriction of the vessels. The heart becomes more and more rapid and irregularity appears, a condition of delirium cordis follows, and finally, the heart stops in diastole.

Increase of the Use of Preservatives in Food.

Dr. A. E. Harris, health officer for Islington, one of the largest of the London boroughs, reports that the use of preservatives in food is increasing and that their number is multiplying. They include alum, alcohol, ammonium, acetate, boric acid and its compounds, carbon dioxid, copper salts, creosote, fluorin compounds, formic acid, formaldehyd, hydrogen peroxid, oxygen, pyroligneous acid, saccharine, salicylic acid, saltpeter, sodium carbonate, sugar, sulphites of sodium and calcium and sulphuric acid. These are used in bacon, beer, bottled fruit, British wine, butter, black puddings, white puddings, cheese, cordials, cream, fish, fresh meat, game, ham, ketchup, lime juice, maragarin, milk, pork pies, sauces, sausages, temperance drinks, vegetables, vinegar and wine, and almost every article of food that can be named. Dr. Harris adds that the object is either to retard decomposition or to enable food prepared under unsatisfactory conditions which would otherwise speedily spoil to be sold. In other words, the object is to induce people to think that they are receiving a well-prepared or freshly made article. He considers that it is high time that something definite be done by the government to check the abuse of food preservatives.

VIENNA LETTER.

(*From Our Regular Correspondent.*)

Vienna, Sept. 20, 1906.

Increase of Alcoholism Among Women.

The recent report of the commissioner for lunacy contains some interesting remarks as to the fluctuation of the number of habitual drinkers. It appears that in lower Austria there are over 2,800 drunkards known as such to the local authorities. Crimes committed under influence of alcohol by these individuals can not be punished, but these people are kept for a certain period under close observation, and if there is danger of the crime being repeated, detention of the individual in a lunatic asylum is ordered by the judge. Therefore, the number of hapless persons is well known to the medical and board of guardians commissioners. Of this number of 2,800 only 640 are women, the rest men; but a comparison with the figures for the last decade shows the constant though as yet not very considerable increase of the number of females from 520 to 640, or 22 per cent., whilst the increase of population for the same period is only 17 per cent. The number of males detained for habitual drinking is fairly constant, averaging 2,200 for the time of record, thus actually declining, if the annual increase in population is taken into the calculation. These facts are the more remarkable, as the consumption of alcoholic beverages has been declining since 1899, especially since the new duties imposed on beer are in force. The total output of beer is lower by 5.5 per cent., of wine 13 per cent., and liquor 3 per cent. (not including spirits for industrial purposes), and the temperance movement is getting a firm hold among the university students, formerly known for their drinking capacities.

Regulation for the New Slaughter-House.

The necessity of supplying a sufficient quantity of cattle for the purpose of butchering has brought about the erection of a new slaughter-house in Vienna, for which new regulations have been issued. First of all, a certificate of health not older than eight days must be produced before the cattle are allowed to enter the premises, and must be signed by a veterinary surgeon of the capital. The house itself must be kept clean and sanitary. All the ejecta and waste matter must either be buried or burned. Adequate storage rooms with ice receptacles will be kept for the benefit of the vendors, but the ice has to be provided by the latter from an unimpeachable source. The necessary lavatories must be inspected daily to ensure their good working order. The officers and employés of the slaughter-house must be clean in habits and dress. The smell of blood must be prevented by a constant current of water, and each animal must be blindfolded before entering the slaughtering hall. The butchered meat is to be subjected to an examination by a staff of specially appointed trained veterinary surgeons before being pronounced fit for human consumption. All meat condemned will be seized and destroyed without exception. The examination is to be directed toward the detection of *Trichina spiralis*, tuberculosis, anthrax and septic conditions. In case of meat derived from hares, rabbits, venison or other not usual animals, the examination is to include methods of discovering diseases to which these animals are liable, and which might be transmitted to man by the use of such meat.

The Charge for a Consultation by Telephone.

The widespread use of the telephone has caused the "*Aerzte kammer*" (medical council) to advise its members to charge for every consultation by telephone as for an actual visit in the house of the physician. At the same time the "*kammer*" leaves it to the discretion of the physician to find out, if the case is such a one that it can be commented on or treated without seeing the patient, reminding its members that treatment "by letter" is not considered right. A charge of at least 50 cents is recommended as a minimum fee for every telephonic information of a medical nature requested by the patient.

Pharmacology

THE SOLUBILITY OF ACETANILID IN SODIUM BICARBONATE SOLUTIONS.

W. A. Puckner.

Secretary of the Council on Pharmacy and Chemistry of the American Medical Association; Professor of Chemistry, University of Illinois School of Pharmacy.

Chicago.

There seems to be a general impression among physicians and pharmacists that sodium bicarbonate renders acetanilid more soluble, or that the acetanilid is more readily absorbed in the stomach if mixed with sodium bicarbonate. Thus, Dr. John Ritter, in The Journal A. M. A., Sept. 1, 1906, page 683, in comparing the official pulvis acetanilidi compositus with the many proprietary acetanilid preparations, says: "Therapeutically it matters very little if in all these various preparations the amount of citrate of caffein is 1/50 grain more or less, or if the amount of bicarbonate of soda is ½, ¾ or 2 grains in each dose, or if the alkaline salt be bicarbonate of soda or potassium carbonate, or carbonate of ammonia, each of which is added simply as a solvent for the acetanilid." Dr. Ritter is here merely repeating an accepted belief which appears to have no basis as a fact.

Acetanilid, $C_6H_5NH(CH_3CO)$, is the acetyl derivative of anilin, $C_6H_5NH_2$; the latter may be considered as a benzene or phenyl derivative of ammonia, NH_3. Just as ammonia combines with acids to form salts so anilin combines with acids to form salts, and these anilin salts (anilin sulphate, anilin chlorid) are generally more soluble in water than anilin itself. While in acetanilid the alkaline properties of anilin have been neutralized almost completely through the introduction of the acetyl group, yet it still is mildly basic and to a certain extent

combines with acids to form salts; that is, just as anilin forms anilin chlorid, so acetanilid can form acetanilid chlorid.

And just as the solubility of anilin in water is increased by the addition of an acid, through salt formation, so the solubility of acetanilid is increased by acids. I have made experiments in which an excess of acetanilid was added to water containing 0.4, 1.0, 5.0 and 10.0 per cent. hydrochloric acid. After agitating for several hours the solutions were filtered and the dissolved acetanilid estimated in portions of the filtrates. These determinations show that acetanilid is much more soluble in 10 per cent. hydrochloric acid than in water, but that in a 0.4 per cent. hydrochloric acid solution its solubility is but slightly increased.

From theoretical considerations it was not to be believed that the solubility of acetanilid would be increased by sodium bicarbonate. This belief was verified by the following experiment: An excess of acetanilid was added to water, the mixture agitated occasionally for several days and filtered. To 25 c.c. of this saturated solution of acetanilid in water was added less than 0.005 gm. acetanilid and 1 gm. sodium bicarbonate and the mixture agitated occasionally during 24 hours. Solution of the acetanilid did not occur, showing that the solubility of acetanilid is not increased even when a relatively large proportion of sodium bicarbonate is added.

These experiments—which were repeated in different ways—appear to demonstrate that the addition of sodium bicarbonate to acetanilid does not increase its solubility; in the stomach its solubility will rather be decreased if sodium bicarbonate is added because the acid usually present in the gastric juice will be partially or wholly neutralised.

If these conclusions are correct, then the addition of sodium bicarbonate to acetanilid is useless if the object is to make the acetanilid more soluble.

Fraud and Deception Connected with So-Called Cod-Liver Oil Preparations.

The introduction of cod-liver oil as a supposedly easily assimilable nutrient and reconstructive was followed by its extensive use in wasting diseases, especially in phthisis, in the treatment of which it came to be considered almost essential, as it was supposed to possess some mysterious power different from that of other oils. Its unpalatable character led to various devices to render it tasteless and to make it more acceptable to the stomach. Emulsions containing the oil in mixture with other substances were put on the market and served a useful purpose. But the oily nature, imperfectly concealed, was disagreeable to many, and gradually other preparations appeared which attempted to retain the supposed therapeutic virtues of cod-liver oil while dispensing with its disagreeable character. This attempt has been carried to the extreme that in many of the cod-liver oil preparations now on the market the oil has been entirely eliminated and all that is left of the oil is the name. This is a species of fraud which has been tolerated too long, but which will be kept up so long as physicians are willing to be duped. Some of these articles are said to "represent" the oil and to possess all its virtues. Others are said to contain oil, while still others are stated to contain "all the valuable constituents." What is the standard by which we may determine the true value of these preparations and by which we may determine whether or not we, and through us our patients, are being humbugged?

A FOOD OR MEDICINE—WHICH?

Is cod-liver oil to be considered a food or a medicine? A food, certainly. As a food its value will consist in the fats it contains. These fats are more easily oxidizable and are considered more digestible than other fats because of the presence of compounds derived from the liver which favor its emulsification and enable it to penetrate the mucous membrane more easily than other fats. Aside from their nutrient properties we have no evidence that the fats of cod-liver oil possess any therapeutic value; if the oil possesses therapeutic qualities they must reside in its non-fatty constituents, and the activity of these non-fatty constituents is not acknowledged by those who have investigated them scientifically. Most pharmacologists believe that whatever virtue there is in cod-liver oil depends on its qualities as an easily assimilable fat.

On the whole, we must conclude with Cushny that "cod-liver oil has not been shown to have any action apart from that of an easily digested food, and its superiority to some other fats and oils has not been satisfactorily established."

If, then, the value of cod-liver oil depends on the presence of fat as its nutritive constituent, the amount of fat a preparation contains will determine the worth or worthlessness of such a preparation; at all events, a preparation claiming to represent cod-liver oil which does not contain fat in some form is fraudulent.

HOW TO PROVE OR DISPROVE THE PRESENCE OF COD-LIVER OIL.

Fats may be changed to fatty acids or to soaps, as occurs under the influence of pancreatic juice in digestion, and still retain their nutritive value, but it is not possible to manipulate them in any way so that they are still valuable as food, and yet do not respond to easily applied chemical tests which demonstrate their fatty nature.

Any preparation of cod-liver oil in which fat or fatty acid is not recognizable by proper tests is valueless as food, since its food value depends on the amount of fat or fatty acid present. An elementary knowledge of chemistry and the application of a few simple tests will enable any physician to learn for himself whether or not a preparation contains fat or fatty acids.

The preparations claiming to "represent" cod-liver oil are in liquid form, and if they contain oil it must be one of the following forms:

1. An emulsion of the oil which may be miscible with water, but from which the fat tends to separate and rise to the top. In this form the fat can be seen as globules under the microscope.

2. A solution, resulting from the saponification of the oil, containing a soap which usually will be alkaline in reaction, especially when mixed with water, and from which fatty acids are separated as a precipitate when the solution is acidified.

3. A solution of fatty acids. This will be acid in reaction and will be precipitated by the addition of water, in which the fatty acids are not soluble.

WATERBURY'S METABOLIZED COD-LIVER OIL.

To illustrate the testing of these preparations we may take Waterbury's "Metabolized Cod-Liver Oil Compound," which, according to the label, "contains the metabolized product obtained by the action of ferments on cod-liver oil," with other ingredients. It is claimed that the oil has been "metabolized"* by the action of pancreatic juice. We would expect to find the fat in one of three forms mentioned above. Examination which any physician can make shows the following facts:

1. It is a clear liquid and no globules of oil are seen under the microscope. It is therefore not an emulsion.

2. It is of acid reaction when mixed with water and remains clear when strongly acidified. Hence it does not contain a soap, and is not a saponification of fat.

3. It mixes with water without precipitation; hence it can not contain more than traces of a fatty acid.

By these simple tests a physician is easily able to demonstrate that the preparation does not contain cod-liver oil. It is therefore valueless for the purpose of nutrition, for which we give the oil. More careful analysis confirms the results of these tests and shows that it contains no fat or fat acids (except the merest traces); one or more bodies with alkaloidal reaction may be extracted from the compound with ether after adding an alkali. No intelligent physician should be misled by the extravagant and unfounded claims made for this preparation.

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* This use of the term "metabolized" is by a manufacturer's license and does not correspond to that of physiologists or of the dictionary which defines metabolism as the "act or process by which on the one hand dead food is built up into living matter, and by which on the other hand the living matter is broken down into simpler products within a cell or organism." It can not properly be used to describe a process occurring outside the body unless the manufacturers have penetrated the secrets of Nature farther than any physiologist has yet been able to go.

HAGEE'S CORDIAL OF COD-LIVER OIL.

But there are other preparations which present the matter in a slightly different form.

Hagee's Cordial of Cod-Liver Oil Compound is said to "represent 33 per cent. of pure Norwegian cod-liver oil," with other ingredients, in perfect solution. It is also claimed, according to the advertising pamphlet, that "in this preparation we have every beneficial constituent of the best and purest Norwegian cod liver oil." Put to the above three tests, however, Hagee's cordial of cod-liver oil is not, 1, an emulsion of cod-liver oil, 2, is not a saponification of cod-liver oil, and 3, does not contain fatty acids. It therefore contains no cod-liver oil. The only nutrients in the mixture, revealed by analysis, are sugar, alcohol and glycerin, none of which is contained in cod-liver oil.

In this case the manufacturer misleads by the use of the word "represents;" he is careful not to say "contains," although the average reader would not be apt to notice the nice distinction. The manufacturer unwittingly admits that it contains no oil when he says that it "contains everything of value except the grease." What else there is of value in cod-liver oil besides the "grease" we do not know. Certainly, if we estimate the value of the remedy by its nutrient properties, it must be set down as practically worthless, if not fraudulent, for although a mixture of sugar, alcohol and glycerin does possess certain nutrient value, the materials can be purchased for it far more cheaply in the open market. It is evident that claims are made for this preparation which can not be substantiated.

Again, some of the so-called cod-liver oil preparations are termed extracts of cod-liver oil, but are not in fact made from the oil, but from the cod-livers instead. They are preparations which, if honestly made, might be worthy of trial, but they are improperly called "extracts" of cod-liver oil, since they do not contain the fat, which is the active constituent of the oil, but the extractives from the liver which may or may not possess therapeutic virtues. So far as we know, however, no satisfactory evidence is forthcoming to indicate that such extractives have any therapeutic value.

The attempt to modify cod-liver oil for therapeutic purposes may be pronounced a failure and the large variety and extensive sale of these preparations appear to be owing to the fact that physicians do not recall the ordinary facts of chemistry and fail to apply simple tests with little technical skill, but too readily accept as facts the statements of the manufacturers.

Correspondence

Interstate Reciprocity and Frauds in Medical Schools.

SAN FRANCISCO, Oct. 1, 1906.

To the Editor:—The communication of Dr. Ethan H. Smith, professor in the College of Physicians and Surgeons of San Francisco, in THE JOURNAL, Sept. 29, 1906, contains so many grave inaccuracies that I beg to be permitted, in reply, to state that: 1. The requirements in California are not determined by the Board of Examiners, but by the Association of American Medical Colleges. 2. H. R. Painton neither claimed nor was he entitled to credit on matriculating at the College of Physicians and Surgeons of San Francisco, the annual announcements of which invariably contained the requirements of the above mentioned association. 3. The records of the California board show Mr. Painton's statement to the credential committee, confirming all the assertions as to his having taught school in South San Francisco during the two years preceding his graduation from the College of Physicians and Surgeons of San Francisco. 4. His work in the medical and pharmacy departments during the two months' summer vacation is not denied, but such work can surely not be construed as an annual course. 5. Last April, just prior to the earthquake, I consulted the college records in reference to Painton. The dean, Dr. Hodghead, and the president, Dr. Winslow Anderson, were present. My carefully made notes show that none of the teachers' blanks gave Painton credit for attendance in 1903 and 1904, whereas attendance was credited for the two subsequent courses. 6. In the opinion of the district attorney of San Francisco Painton's act constitutes perjury. 7. The archives of the California board contain numerous similar instances of fraud on the part of the College of Physicians and Surgeons of San Francisco. 8. The perusal of the records and minutes of the California board, all of which are open for public inspection, and a close study of the constitution of the Association of American Medical Colleges are respectfully suggested to Dr. Ethan H. Smith.

DUDLEY TAIT.

The Necessity for Better Provision for Legal Medicine in This Country.

NEW YORK, Oct. 8, 1906.

To the Editor:—Anent your editorial on the above subject August 25, in which you lament the lack of instruction in medical jurisprudence, kindly permit one of your readers to say that as far as Cornell is concerned, your statement is incorrect.

While it is true that Cornell does not have a special chair in medical jurisprudence, that subject is as thoroughly covered as is possible without such special chair, by some of the other departments of the regular course, viz.: lectures in toxicology by Prof. R. A. Witthaus to third-year students; gross pathology and autopsy work at the morgue in the third and fourth years respectively, under the direction of Dr. O. H. Schultze, who is a coroner's physician of several years' standing and a medicolegal expert of more than local renown, and, last but not least, in the thorough course in mental diseases given to the senior class by Prof. A. Meyer, head of the New York state hospitals for the insane.

In this connection I fully agree with your Philadelphia correspondent in his note published October 6, that a lawyer can not give adequate instruction in this important branch; and that, furthermore, a coroner's physician is almost indispensable.

SAMUEL HOLLANDER, M.D.

PHILADELPHIA, Oct. 6, 1906.

To the Editor:—The letter of my friend, Prof. Henry Leffmann, on "The Teaching of Medical Jurisprudence," published in the last number of THE JOURNAL, may possibly be misunderstood by some who are not familiar with the inner workings of the coroner's office of Philadelphia. First of all, the "City Party," an organization which has done so much for bettering the political situation in Philadelphia, elected its nominee for coroner last November, and anyone who has paid attention to the manner in which this office has been conducted since Jan. 1, 1906, by the present coroner, J. M. Rush Jermon, Esq., of the Philadelphia bar, knows that the business of this department has been carried on honestly, fearlessly and well. It should also be stated in this connection that the exposures by the *Record*, to which reference was made in Professor Leffmann's letter, occurred many years ago. Second, the *Proceedings of the Philadelphia Pathological Society* for the past twenty years show numerous and constant references to material of a medicolegal nature collected and exhibited at this society by the various physicians to the coroner; while hundreds of dead bodies from the coroner's office have been autopsied, and specimens taken from other cases demonstrated, before the students of our various medical colleges during the same period of time. While serving as senior coroner's physician of Philadelphia from 1896 to 1899, the official records of the office show that I made 799 autopsies. The material removed from these bodies was largely used in a teaching position which I then held in connection with one of our medical schools. Indeed, my own book on "Postmortem Pathology," of which the third edition is to be translated into German, and the forthcoming work on "Medical Jurisprudence," by Dr. William S. Wadsworth, the present incumbent of the office, and myself, would have been impossible were it not for the data collected from those dying violent and suspicious deaths in the city of Philadelphia.

HENRY W. CATTELL.

JERSEY CITY, N. J., Oct. 6, 1906.

To the Editor:—In a letter in THE JOURNAL, September 8, I took exception to a statement you had made in a previous editorial (August 25) that certain New York medical schools make no mention of the subject of medical jurisprudence. In informing you that a course in medical jurisprudence is given each year at the Long Island College Hospital, Brooklyn, my letter was written only to correct your error.

In THE JOURNAL, October 6, p. 1116, Dr. Leffmann refers rather sarcastically to my letter of September 8. I had no intention of discussing the value of instruction in medical jurisprudence as it is taught or the merits of any one particular course. The course I referred to, however, does consist of exactly what Dr. Leffmann mentions: "Questions of ethics, general and legal, limitations of professional duties and rights, and cognate questions." And are not these things just what comprise medical jurisprudence?

I must confess that I was not aware that medical jurisprudence includes "practical instruction in the determination of the cause of death." If that is what medical jurisprudence consists of, then every medical college in New York teaches it. Probably New York and Philadelphia disagree on this point. I agree with Dr. Leffmann that it is the medical man who should give "instruction in the determination of the cause of death." And it is the medical man who does give such instruction in the medical schools of New York; given by the department of pathology.

Each school in New York has abundant material for this purpose, and uses all it has in affording the students an opportunity to see, examine and autopsy a large number of bodies each year, under the direction of the professor of pathology. Surely the men who hold such positions in the larger medical colleges, even if at the time they are not "coroner's physicians," are fully as competent to give "practical instruction in the determination of the cause of death."

WALTER T. DANNREUTHER, M.D.

Marriages

ALFRED A. HERMANN, M.D., Newark, Ohio, to Chicago, September 29.

GEORGE B. WOOD, M.D., to Miss Helen Foss, both of Philadelphia, October 2.

FRANK KEAGY, M.D., to Miss Martha Bennett, both of Altoona, Pa., September 26.

RALPH M. TIDD, M.D., to Miss Nettie E. Whetson, both of Clark, Pa., September 24.

JAMES HENRY, M.D., to Miss Leona Reeves, both of Grand Rapids, Mich., September 26.

A. DAVID WILLMOTH, M.D., to Miss Edna Cralle, both of Louisville, Ky., September 27.

ARCHER W. SIMS, M.D., to Miss Charlotte Badger, both of Birmingham, Ala., September 27.

HAYWOOD BERT BARTHOLOMEW, M.D., to Miss Madge Tison Hurst, both of Denver, October 1.

WILLIAM FREDERICK BAKER, M.D., Birnamwood, Wis., to Miss Inez I. Powle, September 22.

C. J. ALTMAIER, M.D., Rudolph, Ohio, to Miss Ada Mae Henry of Columbus, September 26.

HARRY EDWARD CLYDE, M.D., Evanston, Ill., to Miss Jennie Mae Rothrock of Chicago, October 3.

EDWARD M. GANS, M.D., Eveleth, Minn., to Miss Genevieve Wolf of Stillwater, Minn., September 26.

ISAAC E. VAN HOESEN, M.D., Coxsackie, N. Y., to Miss Marie A. Gauger, at Albany, N. Y., September 26.

WILLIAM LYNN WILSON, M.D., to Miss Marguerite McConnell, both of St. Joseph, Mich., September 22.

EDWIN B. KENNER, M.D., Galveston, Texas, to Miss Lulu Shumaker of Warrensburg, Mo., September 27.

ARTHUR W. STROUT, M.D., Gardiner, Maine, to Miss Delia May Swain of Farmingdale, Maine, September 26.

ELLIS JEAKINS CHAPMAN, M.D., to Miss Ida Mae Hutchinson, both of Bridgeton, N. J., at Shiloh, August 30.

ROY C. FAUST, M.D., Salem, S. D., to Miss Grace Bates of Pilot Township, Cherokee County, Iowa, September 18.

Deaths

Francis J. McQueeney, M.D. Harvard University Medical School, Boston, 1889; a member of the American Medical Association, Massachusetts Medical Society, Boston Medical Library, American Association for the Advancement of Science, American Geographical Society and Harvard Medical Alumni Association; high medical examiner of the Catholic Order of Foresters of Massachusetts; a police surgeon of Boston, died suddenly at his home in that city, October 1, from heart disease, aged 47.

William T. Skinner, M.D. University of Maryland School of Medicine, Baltimore, 1870; a member of the American Medical Association, and a member and president in 1888 of the Delaware State Medical Society; one of the most prominent physicians of Delaware, and a resident of Glasgow, was killed in a runaway accident near Porter's Station, September 29, aged 64. His daughter, who was with him in the carriage, was also killed.

Henry Elmer Musser, M.D. Jefferson Medical College, Philadelphia, 1875; a member of the Medical Society of the State of Pennsylvania and the Lancaster City and County Society, died suddenly at his home in Witmer, Pa., September 22, from angina pectoris, aged 54. At a meeting of the county society resolutions were adopted placing on record its appreciation for Dr. Musser and its sympathy for his family.

Robert H. Sturgeon, M.D. Chicago Medical College, 1891; one of the most prominent practitioners of the upper peninsula of Michigan, assessor and treasurer of the village of Iron River for two terms, died at his hospital in Iron City, September 28, from injuries received in a railway accident three days before, aged 47.

Sylvester S. Burrows, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1853; who represented Ashtabula County, Ohio, in the legislature 25 years ago, and was afterward superintendent of the State Asylum for the Blind, Columbus, died suddenly at his home in Geneva, September 28, aged 79.

Henry Frank Conover, M.D. Northwestern University Medical School, Chicago, 1904, of Crivitz, Wis., while attempting to quiet a crowd assembled at a charivari at the home of a neighbor, October 3, was accidentally shot in the leg, the femoral artery being severed, and died 30 minutes later, aged 25.

Franklin B. Ferguson, M.D. Medical School of Maine, at Bowdoin College, Brunswick, 1852; a member of the American Medical Association and of the Maine Medical Association; one of the most prominent physicians of Hancock County, Maine, died at his home in Deer Isle, September 21, aged 78.

Sirvilla A. Bennett, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1855; a veteran of the Civil War, and for several years a member of the board of health of Norway, Maine, died at his home in that city, September 20, after a short illness, aged 77.

Mark Emerson, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1853; of Half Moon Bay; a resident of California for 50 years, died in Redwood City, September 21, six days after amputation of the leg for septicemia, aged 74.

John C. Beekman, M.D. New York University, New York City, 1882; of New York City; one of the consulting physicians to the Harlem Hospital, died in Atlantic City, N. J., September 28, from heart disease, after an illness of one week, aged 48.

Edward Louis Buchart, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1903; a member of the Vanderburgh County (Ind.) Medical Society, died suddenly from heart disease, September 25, at his home in Evansville, aged 27.

James Moffitt, M.D. Rush Medical College, Chicago, 1868; who retired from practice in 1880 on account of ill health and has been an invalid for the past 18 years, died at his home in Monticello, Ill., September 21, from uremia, aged 66.

Walter W. Routh, M.D. Pulte Medical College, Cincinnati, 1887; health commissioner of Duluth in 1894 and 1895, died in Pasadena, Cal., September 27, from tuberculosis, after an illness of eight years, aged 50.

C. L. Clay, M.D. Kentucky School of Medicine, Louisville, 1876; a practitioner of McLennan County for 30 years, died at his home in Moody, Texas, September 25, from typhoid fever, after a long illness.

Butler Cooper, M.D. Iowa Eclectic Medical College, Des Moines, 1888; health officer of Ankeny, Iowa, died at his home in that city, September 27, from tuberculosis, after a long illness, aged 39.

George F. Hand, M.D. New York Homeopathic College and Hospital, New York City, 1865; of Binghamton, N. Y., died in Brooklyn, September 27, after an operation, aged 63.

John B. Simpson, M.D. Medical College of Georgia, Augusta, 1861, died at his home in Prosperity, S. C., September 20, after a lingering illness, aged 70.

Association News

NEW MEMBERS.

New members of the American Medical Association for the month of September, 1906:

ALABAMA.

Baird, R. H., Cullman.
Donehoo, J. H., Ethelville.
Langley, O. V., Camp Hill.
Martin, A. P., Cullman.
Swann, Edward, Sprott.
Taylor, A. S., Mobile.
Waldrop, R. W., Bessemer.
Zurmehly, S. L., Bridgeport.

ARIZONA.

Pennell, F. C., Roosevelt.

ARKANSAS.

Quidor, J. E., Argenta.
Short, Z. N., Hot Springs.

CALIFORNIA.

Adams, P. A., Los Angeles.
Baker, Fred, San Diego.
Bering, B. E., Tulare.
Briggs, E. F., Watsonville.
Conlan, F. J. S., San Francisco.
Galbraith, Alex., Oakland.
Gibbons, H. W., San Francisco.
Holbrook, G. S., San Francisco.
Jackson, J. A., Hollywood.
Jones, J. T., Grass Valley.
Mead, L. D., Byron Hots Springs.
Simmons, H. M., San Francisco.
Tucker, G. E., Riverside.

COLORADO.

Haslett, H. W., Paonia.
Rowe, M. J., Denver.

CONNECTICUT.

Chaffee, J. S., Sharon.
Littlejohn P. D., New Haven.

DISTRICT OF COLUMBIA.

Bata, S. B., Washington.
Dunlop, John, Washington.
Ruedy, R. C., Washington.

FLORIDA.

Williams, J. F., Monticello.

GEORGIA.

Arnold, J. T., Parrott.

ILLINOIS.

Babb, Helen, Springfield.
Baxter, A. J., Astoria.
Benson, E. O., Chicago.
Colbourne, J. A., Pontiac.
Colby, C. P., Springfield.
Comba, G. W., Ridgway.
Connett, J. E., Lawrenceville.
Corbus, P. L., Kankakee.
Culbane, T. H., Rockford.
Cummins, J. S., Rosiclare.
Davisson, A. W., Peoria.
Dinges, H. A., Red Bud.
Perry, L., Geneseo.
Gerould, T. P., Centralia.
Hassett, J. J. McLeansboro.
Heintz, E. L., Chicago.
Hager, Daniel S., Chicago.
Horine, E. S., Colfax.
Hubbard, C. M., Virginia.
Huston, J. W., Virginia.
Kelly, J. W., Springfield.
Kraft, O. H., Chicago.
Lovewell, C. Hubart, Chicago.
Mannon, J. H., Kewanee.
Mitchell, W. C., Rock Island.
Morgan, P. B., Cornell.
Morgan, F. R., Towanda.
Parish, L. N., Harrisburg.
Quist, F. J., Chicago.
Rawlins, R. L., Chicago.
Ritchey, E. M., Menard.
Runte, Janet Pde, Chicago.
Songer, W. E., Menard.
Stots, C. F., Chicago.
Taylor, J. F., Buda.
Thompson, T. W., Xenia.
Webb, W. J., Chicago.

INDIANA.

Barnes, C. A., Greenfield.
Bopp, H. W., New Salisbury.
Cunningham, J. M., Indianapolis.
Dixon, H. T., Evansville.
Ford, K. C., Indianapolis.
Garrett, J. D., Indianapolis.
Hoskins, W. D., Indianapolis.
House, J. W., Indianapolis.
Leonard, H. S., Indianapolis.
Moschelle, J. D., Indianapolis.
Robinson, W. B., Indianapolis.
Smith, L. W., Liberty Center.
Thompson, A. A., La Pas.
Well, H. J., Indianapolis.

INDIAN TERRITORY.

Conger, H. A., Duncan.
Henderson, C. F., S. McAlester.
Kendall, W. L., Durant.

IOWA.

Boles, J. C., Washington.
Cary, F. T., Colo.
Cooling, W. A., Wilton.
Hansell, Wm., Ottumwa.
Huband, C. E. Ottumwa.
Hull, J. H., Washington.
Hullinger, J. D., Clinton.
Joynt, M. J., Jesup.
McFall, W. G., Hiteman.
Onsum, E. Washon.
Price, A. S., Des Moines.
Rvp, W. W., Centerville.
Tapper, G. W., Rowley.

KANSAS.

Brown, G. H., Chanute.
Dunning, Chas., Arkansas City.
Gabriel, G. W., Parsons.
Hood, T. A., Garnett.
Johnson, S. D., Chanute.
Mains, J. R., Whiting.
Martin, Mary S., Coffeyville.
Moore, R. M., Olathe.
O'Connor, R. R., Grenola.
Smith, Albert, Parsons.
Burber, C. C., Independence.

KENTUCKY.

Cook, O. C., Crayneville.
Dawson, C. B., Mt. Sterling.
Fox, J. E., Levias.
Francis, W. R., Bowling Green.
Gardner, W. F., Sheridan.
Koehler, P. W., Louisville.
Kleiser, A. H., Eminence.
Trisler, J. W., Marion.

LOUISIANA.

Schiro, Salvatore, New Orleans.

MARYLAND.

Brace, C. H., Cumberland.
Freedom, A. G., Baltimore.
Linthicum, O. M., Rockville.

MASSACHUSETTS.

Frost, E. C., Brockton.
Johnson, P. P., Beverly.
McCormick, C. J., Waltham.
Schroeder, M. C., Boston.

MICHIGAN.

Barrett, F. E. Kalamazoo.
Cretser, L. S., Petoskey.
Eaton, D. H., Kalamazoo.
Eaton, S. R., Battle Creek.
Foster, I. C., Albion.
Green, G. W., Dowagiac.
Haughey, W. H., Jr., Battle Creek.
Howell, D. C., Onaway.
McLarty, A. A., Manistee.
Read, A. J., Battle Creek.
Riley, W. H., Battle Creek.
Stone, W. A., Kalamazoo.
Stripp, A. E., Charlevoix.
Van Rickle, F. A., So. Frankfort.
Wright, W. J., Gregory.

MINNESOTA.

Abbott, C. U., Aurora.
Adair, F. L., Minneapolis.
Dreisbach, Norman, Minneapolis.
Nissen, Henrik, Minneapolis.
Reay, G. R., Hokah.
Robilliard, W. H., Faribault.
Smersh, F. M., Owatonna.

MISSISSIPPI.

McNeal, B. F., Leota Landing.
Ullman, J. S., Natchez.

MISSOURI.

Bennett, F. W., St. Louis.
Bondurant, W. E. H., Memphis.
Booth, H. A., Pacific.
Briegleb, C. F., St. Clair.
Davis, A. L., Arbela.
Downing, T. J., New London.
Ferrell, J. J., Owensville.
Geisinger, E. J., Unionville.
Lopp, J. E., Jefferson City.
Malcolm, R., Silkeston.
Robertson, W. M., St. Louis.
Weiss, F. H., Kansas City.
Williamson, C. W., Poplar Bluff.
Zieber, W. H., Queen City.

NEBRASKA.

Conaway, J. B., York.
Plehn, F. W., Burchard.

NEVADA.

Masterson, J. R., Dayton.

NEW JERSEY.

Ames, E. H., Jersey City.
Harbert, G. E., East Orange.
Hardenberg, D. S., Jr., Jersey City.
Seibert, E. C., Orange.

NEW YORK.

Andrews, R. M., Bergen.
Allen, A. H., Gouverneur.
Allen, R. P., Oriskany.
Baker, F. J., Lockport.
Beaupre, J. O. A., Malone.
Bibbins, C. N., Watertown.
Blood, N. D., Auburn.
Breese, A. B., Syracuse.
Briggs, C. M., Fairport.
Brooks, N. O., Oneida.
Burch, J. H., Baldwinsville.
Clark, Bradley.
Clowe, C. F., Schenectady.
Collier, E. J., Amsterdam.
Cose, E. M., Cattaraugus.
Deck, O. H., Rensselaer.
Dickert, J. G. Brooklyn.
Donovan, P. M., Canandaigua.
Dow, F. F., Rochester.
Elting, A. W., Albany.
Finch, H. C., Broadalbin.
Fitch, R. R., Rochester.
Geyser, A. C., New York.
Hammond, C. N., Elmira.
Hennessy, W. J., Palmyra.
Hoyt, A., Watertown.
Hudson, W. T., Auburn.
Hurrell, Louise M., Rochester.
Hyde, R. K., Plattsburg.
Ietz, A. E., Watertown.
Johnson, D. F., Newark.
Johnson, H. D., New York.
Johnston, A. M., Utica.
Kane, J. P., Olean.
Kaufmann, Jacob, New York.
Kellow, W. J., Watertown.
Knight, Robt., Seneca Falls.
Lapp, R. H., Williamson.
Lester, F. W., Seneca Falls.
Martin, M. E., Attica.
McAvenoy, W. J., Brooklyn.
McIlmoyle, H. A., Ogdensburg.
Morton, E. R., Brooklyn.
Murray, Archibald, Brooklyn.
Nock, T. G., Rome.
O'Connor, J. C., Rochester.
Oliver, G. H., Malone.
Osterhout, Elijah, Newburgh.
Paul, G. P., Troy.
Pfarre, E. R., New York.
Preston, Frank, Greene.
Roos, G. W., Wellsville.
Ruggles, P. Wood, Rochester.
Russell, W. D., New Hartford.
St. John, H. L., Rochester.
Sanford, M. J., Suffern.
Seeley, C. R., Attica.
Selover, C. W., Stanley.
Shaw, H. L. K., Albany.
Shea, P. H., Canton.
Smith, C. E., Whitesboro.
Smith, W. G., Walton.
Strasenburgh, F. A., Avon.
Waller, P. G., New Baltimore.
West, C. B., Central Islip.
Whitbeck, J. F. W., Rochester.
Willard, E. S., Watertown.
Wright, H. B., Skaneateles.
Zimmer, John, Rochester.

OHIO.

Adams, Thos., Cleveland.
Ash, R. C., Ashland.
Barton, R. S., New Philadelphia.
Calhoun, G. E., Uhrichsville.
Carson, F. D., Benton.
Clark, C. S., Leesville.
Eddy, R. C., Cleveland.
Emmert, W. F., Ashland.
Fulwider, R. M., West Liberty.
Green, H. S., Cardington.
Hubbell, W. B., Elyria.
Jones, W., Westerville.
Jones, D. K., Canal Fulton.
Lemon, W. L., Cleveland.
Leslie, F. A., Toledo.
Mayhugh, C. H., Westerville.
Merriam, W. H., Fredericksburg.
Millikin, Emma, Ontario.
Perry, W. H., Van Wert.
Pyle, J. S., Toledo.
Rice, R. A., Columbus.
Richardson, E. O., Marion.
Rosenthal, H. A., Bridgeport.
Rusk, R. P., Cadiz.
Smith, H. H., Lexington.
Stockton, C. Carrollton.
Stokes, C. C., Rushylvania.
Stout, W. C., Killbuck.
Webster, G. E., Kingsville.
Widdecombe, Emily J., Kent.
Williams, J. K., Carrollton.
Wolf, C. P., Massillon.

OKLAHOMA.

McLean, G. D., Oklahoma City.
Taylor, G. W., El Reno.

OREGON.

Dammasch, F. H., Portland.

PENNSYLVANIA.

Barr, R. F., Jr., Philadelphia.
Bair, C. H., Homestead.
Bateson, J. C., Scranton.
Comroe, J. H., York.
Dunnick, M. C., Shrewsbury.
Harter, G. A., Manyunk.
Havens, J. W., Philadelphia.
Hesner, A. J., Pittsburg.
Hickson, W. J., Pittsburg.
Lindeman, C. E., Pittsburg.
Mallon, E. A., Philadelphia.
Myers, N. B., Wanamie.
Pierce, A. M., West Elisabeth.
Reeser, Richard, Columbia.
Smith, Stanley, Pittsburg.
Williams, C. S., Harrisburg.

SOUTH CAROLINA.

Cudd, A. D., Spartanburg.
Jervey, A. J., Charleston.
McCormack, J. R., Olar.
Posey, E. O., Woodruff.

SOUTH DAKOTA.

Giffin, A. M., Rapid City.
McKechnie, W., Egan.

TENNESSEE.

Allen, P. McF., West Nashville.
Barr, R. A., Nashville.
Dixon, W. C., Nashville.
Ehlen, J. G., Lenoir City.
Graham, Frank, Memphis.
McCabe, W. M., Nashville.
Perry, Alexander, Nashville.
Stanley, E., Memphis.
Walker, G. M., Soddy.
Washburn, P. A., Nashville.

TEXAS.

Boyd, J. E., Aquilla.
Cleary, P. J. A., San Antonio.
Herring, Isaiah, Prairie Grove.
Jameson, G. M., Dublin.
Lindsay, A. H., Paris.
Scott, Z. T., Clifton.

UTAH.

Nelson, J. B., Monroe.

VERMONT.

Bosworth, Robinson, Barton.
Ricker, W. G., Wells River.

VIRGINIA.

Amiss, E. P., Harrisonburg.
Armstrong, G., Staunton.

Baird, T. B., Norfolk.
Baker, S. J., Manchester.
Brunk, O. C., Charlottesville.
Irvine, J. S., Danville.
Rice, B. A., Forest Depot.

WASHINGTON.

Palmer, D. H., Seattle.

WEST VIRGINIA.

Curry, A. W., Ronceverte.
Dix, Sherwood, Williamson.
McKinney, L. L., Burnsville.
Oates, T. K., Martinsburg.
Peck, S. P., Hinton.
Perry, O. L., Elkins.
Stump, E. H., Philippi.
Wootter, A. J., Weston.

WISCONSIN.

Flatley, M. A., Antigo.
Lenfesty, J. P., De Pere.
O'Connor, D. J., Appleton.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

BREWERS' GRAINS AS FOOD FOR CATTLE.

———, N. J., Sept. 26, 1906.

To the Editor:—Can you or any of your readers inform me why wet brewers' grains are not allowed by some municipalities to be given in the dairies which they license for milk supply? Surely these grains form a useful and comparatively inexpensive part of the cow's ration, especially where it is difficult to grow alfalfa, and if carted from the brewery frequently, and in small quantities (by the farmer) and properly salted, should be subject to little change. Is it not a fact that in those places where dried brewers' grains are allowed the farmers wet them and leave them soaking for twenty-four hours or longer? I should like to see a discussion or expression of opinion on this subject, for I am health officer in my city, and in going around the dairies have seen that a good many farmers use these grains, and I should be disinclined to propose a prohibitive clause in our ordinances unless there is a really good reason for it. S.

ANSWER.—Average analyses show that brewers' grains contain more than 20 per cent. albumin, from 40 to 50 per cent. carbohydrate, and more than 6 per cent. fat. In the wet state more than 75 per cent. water is present. If allowed to remain in a moist condition lactic acid fermentation sets in, which later is supplanted by butyric acid fermentation. Finally, after a certain amount of butyric acid has accumulated, putrefaction begins, which, by the production of ammonia, neutralizes the lactic and butyric acids and imparts an alkaline reaction to the mass of grains. The odor is then offensive, and the food value diminishes as the proteid contents are decomposed by the putrefactive bacteria. In this state, if not positively injurious, brewers' grains are at least of little food value. According to Dietrich, 100 pounds of barley yield 26 pounds of dry and 110 pounds of moist grains. About 65 per cent. of the nitrogenous, 20 per cent. of non-nitrogenous extract, two-thirds of the ash, and almost all the phosphoric acid pass into the refuse. If this refuse is dried without being pressed it loses none of its valuable constituents. Soaking for one-half hour in hot, or for from five to six hours in cold water, restores the dried grains to their original moist condition. There is no disagreeable odor and no sour taste in this condition. During the stage of lactic acid fermentation it is questionable whether the grain is injurious for use as food. Silage, which has been shown to be at least equal to fresh fodder, also contains lactic acid. Legitimate objection, however, can be raised if brewers' grains are fed in a state of putrefaction. Feeding experiments indicate that when cows are fed with brewers' grain, even in large amounts and in the early stages of fermentation, detrimental results do not follow (New York Agricultural Experiment Station, 1884). At present dry brewers' grains are listed among the licensed feeding stuffs in Wisconsin. One experimenter (A. S. Alexander) found that the flow of milk increased with brewers' grains as food, and that the quality of the milk was good. In conclusion, it may be said that the considerable amount of nutrient material in brewers' grains makes them, when fed to cattle in proper condition, of great value. Brewers' grains alone should not be expected to furnish cattle with a suitable amount and quality of food any more than any other food substance, and the chief objections advanced against the use of brewers' grains are also applicable to many other food materials. If given in conjunction with other feeding stuffs and before putrefaction has set in brewers' grain must be considered a valuable and cheap food for dairy cattle. No detrimental effect has been demonstrated either on the health of the animals or on the milk produced by them. On the other hand, distillery refuse containing considerable quantities of alcohol seems to be very undesirable.

EMULSION OF SILVER IODID.

WEST GROVE, PA., Sept. 28, 1906.

To the Editor:—Some time ago I saw a formula for emulsion of silver iodid in THE JOURNAL, but I have mislaid the number containing it. Will you kindly give me the formula and greatly oblige DR. W. B. EWING.

ANSWER.—This formula appeared in THE JOURNAL A. M. A., June 9, 1906, page 1766, in chapter XXIV of "The Pharmacopœia and the Physician." The formula is as follows:

℞. Argenti nitratis
Potassii iodidi aa.....gr. xxxiii 2
Mucilago chondri (N.F.).....ʒvi 25
Aquæ dest. q. s. ad.....ʒiii 100

M. Sig.: Use as an injection.

The best method of preparing a finely-divided precipitate is to dissolve the potassium iodid in all of the water and to add the crystals of silver nitrate, shaking well after each addition; when the silver nitrate is dissolved add the mucilage and shake thoroughly once more. The resulting mixture will represent approximately 3 per cent. of silver iodid. If prepared in this way the weaker mixtures will require a correspondingly smaller amount of mucilage to hold the powder in suspension and mixtures below 1 per cent. may be dispensed without the addition of any foreign material.

WHAT IS A RESIDENT PHYSICIAN?

HOT SPRINGS, S. D., Oct. 4, 1906.

To the Editor:—Will you, through the columns of THE JOURNAL, kindly define what is called a "resident physician" to a hospital?

F. E. WALKER.

ANSWER.—The physician who lives in the hospital (or sometimes near by) who has the routine medical oversight of the patients and who is supposed to be within call during his hours of duty.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Oct. 6, 1906:

Hoff, John Van R., asst.-surgeon general, granted 30 days' leave of absence.

Havard, Valery, asst.-surgeon general, left Washington, D. C., en route to Newport News, Va., for duty as chief surgeon, Cuban expedition.

Kean, J. R., surgeon, left Washington, D. C., en route to Havana, Cuba, for duty.

Crabtree, Geo. H., asst.-surgeon, left Ancon, Canal Zone, Isthmus of Panama, on 6 weeks' leave of absence.

Morris, S. J., asst.-surgeon, reported for duty as transport surgeon of the *Sumner*.

Eastman, William R., asst.-surgeon, left Army General Hospital, Presidio of San Francisco, on leave of absence for 10 days.

Woodruff, Charles E., surgeon, returned to Plattsburg Barracks, N. Y., from leave of absence.

DeLaney, M. A., asst.-surgeon, returned to attending surgeon's office, Washington, D. C., from leave of absence.

Harvey, F. F., asst.-surgeon-general, returned to Governor's Island, N. Y., from leave of absence.

Buck, C. D., asst.-surgeon, left Fort Leavenworth, Kans., for the Army General Hospital, Presidio of San Francisco.

Raymond, H. L., surgeon, left Columbus Barracks, Ohio, with troops for Fort Mackenzie, Wyo.

Lewis, W. F., asst.-surgeon, returned from Chicago, to his proper station, Ill.

Chamberlain, W. P., asst.-surgeon, left Jackson Barracks, La., on leave of absence for two months.

The following named officers ordered to duty with expedition to Cuba:

Havard, Valery, asst. surgeon-general.

Taylor, Blair D., deputy surgeon-general.

Johnson, Richard W., Birmingham, Henry P., Willcox, Charles, Frick, Euclid B., and Clarke, Joseph T., surgeons.

Geddings, Edward F., Hartsock, Frederick M., Truby, Willard F., Brooks, William H., Little, William L., Church, James R., Webb, Walter D., Allen, John H., Thomason, Henry D., Gilchrist, Harry L., Bevans, James L., Davis, William T., Truby, Albert E., Patterson, Robert U., Hansell, Haywood S., Fauntleroy, Powell C., Cowper, Harold W., Kieffer, Charles F., Koerper, Conrad E., Quinton, William W., Miller, Reuben R., Webber, Henry A., Wilson, Compton, Duval, Douglas F., Tefft, William H., Stone, John H., Shook, Jay R., Whitcomb, Clement C., Smart, R., Richards, Robert L., Bartlett, Cosam J., Marrow, Charles R., and Miller, Edgar W., asst.-surgeons.

Richard, Frederick D., contract surgeon, ordered from Fort Wood, N. Y., to Fort Totten, N. Y., for temporary duty.

McAlister, John A., dental surgeon, left Fort Rosecrans, Cal., and arrived at the Presidio of Monterey, Cal., for duty.

Wing, Franklin F., dental surgeon, returned to Fort D. A. Russell, Wyo., from leave of absence.

Stone, Frank P., dental surgeon, returned to Fort Sam Houston, Texas, from leave of absence.

Boak, S. Davis, dental surgeon, left Columbus Barracks, Ohio, on leave of absence.

Wolven, F. Homer, dental surgeon, left Fort Jay, N. Y., and arrived at Fort Monroe, Va., for duty.

Mason, George L., dental surg., left Fort Fremont, S. C., and arrived at Fort Moultrie, S. C., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Oct. 6, 1906:

Wentworth, A. R., surgeon, detached U. S. R. S. *Franklin*, Navy Yard, Norfolk; to the *Louisiana*, sailing Oct. 4, 1906.

Evans, S. G., surgeon, detached *Louisiana* and from treatment at the Naval Hospital, Boston, and granted sick leave of absence for two months.

Lovering, P. A., medical inspector, detached U. S. Naval Medical School, Washington, D. C.; to command the U. S. Naval Hospital, Norfolk, Va.

Brooks, F. H., asst.-surgeon, when discharged treatment at Naval Hospital, Newport, granted sick leave of absence for six weeks.

Du Bose, W. R., medical inspector, detached duty as assistant to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., etc.; to command U. S. Naval Hospital, Yokohama, Japan, sailing Oct. 20, 1906.

Halloway, J. H., P. A. surgeon, to the *Nevada*.

McLean, A. D., P. A. surgeon, detached Navy Recruiting Station, Cincinnati, Ohio; to duty at Navy Recruiting Station, Detroit.

Woodward, J. S., asst.-surgeon, to Navy Recruiting Station, Cincinnati, Ohio.

Boyd, John C., medical director, to duty in command of the U. S. Naval Medical School Hospital in addition to his present duties.

DeBruler, J. P., asst.-surgeon, to duty at U. S. Naval Medical School Hospital in addition to present duty.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Oct. 3, 1906:

Wertenbaker, C. P., surgeon, extension of leave of absence for seven days from September 22, granted Surgeon Wertenbaker, amended so as to read for four days only.

Wickes, H. W., P. A. surgeon, directed to proceed to Stapleton, N. Y., and report to the medical officer in command for duty and assignment to quarters, on being relieved from duty at Reedy Island Quarantine Station by P. A. Surgeon W. A. Korn.

Lavinder, C. H., P. A. surgeon, directed to proceed to Wilmington, N. C., and assume command of the service, on the arrival at Stapleton, N. Y., of P. A. Surgeon H. W. Wickes.

Hobdy, W. C., P. A. surgeon, granted leave of absence for ten days from October 1.

Stansfield, H. A., P. A. surgeon, relieved from duty at Baltimore, and directed to proceed to Havana, Cuba, reporting to P. A. Surgeon R. H. von Esdorf for duty.

Salmon, T. W., asst.-surgeon, granted leave of absence for seven days from September 29, under Paragraph 191 of the Regulations.

McKeon, F. H., asst.-surgeon, granted leave of absence for one day.

Fogarty, J. N., acting asst.-surgeon, granted leave of absence for one day, September 18.

Goldsborough, B. W., acting asst.-surgeon, granted leave of absence for two days from September 29.

Hicks, W. R., acting asst.-surgeon, granted leave of absence for ten days from September 22.

Watkins, McDonald, acting asst.-surgeon, granted leave of absence for one day.

Allen, G. C., pharmacist, leave of absence granted Pharmacist Allen for twenty-three days from August 4, amended to read twenty-three days from August 5.

APPOINTMENTS.

Dr. Friench Simpson, of Texas, commissioned (recess) as assistant surgeon, Public Health and Marine-Hospital Service, October 1.

Dr. Robert A. Herring, of Mississippi, commissioned (recess) as assistant surgeon, Public Health and Marine-Hospital Service, October 1.

BOARDS CONVENED.

Boards of medical officers were convened to meet on Oct. 10, 1906, for the purpose of making physical examinations of applicants for cadetships in the Revenue Cutter Service at the following named places: Washington, D. C., Asst. Surgeon-General J. W. Kerr, chairman, Asst.-Surgeon J. W. Trask, recorder; Boston, Surgeon R. M. Woodward, chairman, P. A. Surgeon B. S. Warren, recorder; New York, Asst.-Surgeon J. S. Boggess, chairman, Acting Asst.-Surgeon R. Knowles, recorder; Philadelphia, Surgeon J. M. Gassaway, chairman, Asst.-Surgeon H. McG. Robertson, recorder; Baltimore, Surgeon L. L. Williams, chairman, Acting-Asst. Surgeon ——, recorder; Chicago, Surgeon G. B. Young, Chairman, Asst.-Surgeon E. T. Olson, recorder; Detroit, Surgeon Fairfax Irwin, chairman, Asst.-Surgeon K. A. C. Wollenberg, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Oct. 5, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Sept. 15-22, 1 case, imported.

SMALLPOX—FOREIGN.

Canada: Toronto, Sept. 8-15, 1 case.
Ecuador: Guayaquil, Aug. 1-31, 39 deaths.
France: Marseilles, Aug. 1-31, 6 deaths; Paris, Aug. 13-15, 11 cases.
Gibraltar: Sept. 2-9, 1 case.
Great Britain: Liverpool, Sept. 8-15, 1 case.
Italy: General, Aug. 23-Sept. 13, 12 cases.
Russia: Odessa, Sept. 1-8, 3 cases, 1 death.

YELLOW FEVER.

Cuba: Habana, Sept. 29, 1 case; Santa Clara Province, Oct. 2, 1 case, 1 death.
Mexico: Merida, Sept. 16-22, 3 cases, 2 deaths; Tierra Blanca, 1 case; Vera Cruz, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, Aug. 4-18, 153 cases, 128 deaths; Provinces, 1,104 cases, 856 deaths.

PLAGUE.

Brazil: Campos, Aug. 14-18, 7 deaths.
China: Hangchow, Aug. 18-25, present; Hong Kong, July 7-Aug. 11, 33 cases, 34 deaths.
Egypt: Alexandria, Sept. 2-13, 6 cases, 3 deaths; Beni Souef Province, Sept. 11, 1 case, 1 death; Suez, Sept. 5-10, 6 cases, 4 deaths.
Mauritius: July 25-Aug. 15, 5 cases, 4 deaths.
Peru: Lima, Aug. 17-20, present.
Turkey: Trebisond, Aug. 8-29, 10 cases, 3 deaths.

Miscellany

The Blood in Gastric Cancer.—Baradoulin examined the blood in 10 patients with cancer of the stomach. The proportion of red blood corpuscles was much diminished and the hemoglobin percentage very low, lower than corresponded to the reduction in the numbers of reds. There was always leucocytosis, more intense the more advanced the case. The leucocyte formula was normal at first, but later the lymphocytes increased while the polynuclears diminished. The leucocytosis of digestion was present in only 2 cases. In both of these, free HCl was found in the stomach content. He also noticed the absence of leucocytosis of digestion in case of cancer in other parts of the body (breast, upper jaw, rectum), and he thinks that this is due to the fact that the lymphatic glands, being constantly irritated by the cancer toxins, cease to respond to such a mild excitation as the process of digestion. In case of gastric ulcer the leucocytosis of digestion can always be determined. He suggests that in doubtful cases the absence of hyperleucocytosis during digestion may serve as a positive sign for differential diagnosis, its absence indicating the presence of cancer. His communication is published with casuistic detail in the *Russky Vrach*, No. 28, 1906.

Abdominal Fissure and Double Genitalia.—In the *British Medical Journal*, Aug. 25, 1906, E. Chill reports a case in which the premature rupture of the membranes was followed by a tedious labor ending in inertia uteri, which necessitated delivery by forceps. The liquor amnii was of a peculiar tenacious consistence, dirty black color, staining deeply as it escaped with each pain. The mother made an uninterrupted recovery. The child was an eight months' fetus and lived for some hours after its birth. The whole of the abdominal wall was absent from about an inch below the point of the sternum to within an inch of the pubic bone, with the exception of a small irregular flap of skin which contained the umbilical cord. The viscera protruded freely through this opening. There was no great omentum. The external genitalia were duplicated and separated from one another by a clearly defined central space of skin (raphe). The urogenital and anal orifices on both sides were extremely rudimentary and suggested early intrauterine arrested development. There were present two shallow sinuses, with raised labia majora in each and two anal depressions below the perineum on either side. The organs on the left of the raphe were rather more developed than those on the right. With the exception of these abnormalities the child was in every other respect well formed, and cried lustily at birth.

Another Test for Detection of Occult Blood.—I. Boas of Berlin describes in the *Centrbl. f. innere Med.*, No. 24, 1906, the application of Storch's reagent to the detection of invisible blood in the stools and stomach content. The test appears to be about as sensitive as the turpentine and aloin tests, but less so than Adler's benzidin reaction. The latter is said by O. Schumm to be too sensitive, sometimes indicating the presence of blood when none exists. The reaction described need not supplant those at present in use, but may prove useful when the findings with the other tests are dubious or contradictory. Boas has recently been using it almost exclusively and says that he has every reason to regard it as an easily applied and reliable test. It is applied as follows: The material is treated in the usual way with as little glacial acetic acid as possible (about 20 drops), and extracted with ether. To the ethereal extract 1 to 2 drops of a very dilute solution of paraphenylendiamin hydrochlorid (1 to 200) are added. As the reaction occurs very slowly if at all in the presence of acid, 1 c.c. of one-half normal alcoholic solution of potassium hydroxid is added to the mixture and then 10 to 15 drops of a 3 per cent. solution of hydrogen peroxid. There now appears immediately at the bottom of the test tube, after a little shaking, a characteristic olive green color. Especially characteristic is the olive green ring between the ether and the hydrogen peroxid layers, while the supernatant liquid shows a more or less intense violet color due to the action of the reagent. The green color is very evanescent and soon changes to a more or less deep dark violet, according to

the amount of blood. In stools containing much bile or urobilin it is advisable to extract with alcohol-ether according to the method of O. Schumm before applying the blood test. In the absence of blood the green color either does not appear at all or only after long standing. Numerous control comparative trials of the new test and those previously used have shown completely concordant results.

Cancer of the Pancreas.—Two cases of cancer of the pancreas are minutely described by Lubenetzky and Phaphanoff in the *Russky Vrach*, Nos. 12-13, 1906. The first patient entered the hospital complaining of weakness, palpitations, nausea, loss of appetite; edema of the feet and ascites. No syphilis or alcoholism. After tapping, a tuberous, solid and very painful tumor could be palpated in the hypogastrium on the median line, but the sides of the tumor were covered. It was immovable during respiration, and inflation of the stomach did not change its position. The stomach contents showed mucus, no HCl, traces of lactic acid, and Sahli's test with desmoid capsules containing iodoform showed absence of iodin in the saliva even twenty-five hours after the test. The feces were apparently normal. The urine, 800 c.c., was not examined with chemical tests. There was no glycosuria nor excess of fat or nitrogen. The further course was accompanied by a distaste for meat, pains in the hypogastrium, rapid reaccumulation of the ascites (the next day), nausea and vomiting immediately after meals, and, later, even fasting. Autopsy showed cancer of the pancreas with involvement of the duodenum, pylorus, omentum and transverse colon. In the second case there was pain in the epigastric and umbilical regions, increasing after meals, also diarrhea, with fair appetite, weakness, but no syphilis or alcoholism, and no ascites. The abdomen was enlarged and in the upper and middle portions of the abdomen along the median line, a tumor could be felt as large as a watermelon, immovable during respiration. The stomach did not contain HCl, but lactic acid was found in normal quantities. The tumor was diagnosed as a cyst of the pancreas, and cancer as the patient showed progressive decline. The operation did not improve his condition and he died several months later. Autopsy confirmed the diagnosis of cyst and cancer of the pancreas, with metastases in the spleen.

Fractures in the Insane.—J. F. Briscoe (*Clinical Journal*, London, August 8), has endeavored to test the truth of the general assumption that the bones of the insane are peculiarly liable to fracture, and especially that the ribs are peculiarly fragile by sending out a circular letter of inquiry to 50 asylums in Great Britain and analyzing the answers received. The general belief, as indicated by the replies, is that fractures are not especially frequent among the insane, and although some observers have noted an unusual fragility of the bones, either from clinical observation or at postmortem, the majority do not seem to think that the insane are in any way peculiar so far as the osseous system is concerned; unless the peculiar fragility is the result of improper nutrition, advancing age, or possibly general paralysis. While trophic changes have been recognized as a result of nervous disease, there seems little reason for giving that as an explanation in the case of the bones, as the nerves entering the bones are mostly distributed to the blood vessels and if they influence nutrition, probably do so through the distribution of blood. There is need of more careful examination of the blood vessels of the bones in these cases. The bones of the insane appear to heal as readily when broken as those of sane persons in general. There is little reason for believing that the ribs are especially liable to softening and fracture. One reason for the more frequent fracture of the ribs in the insane may be an original defect of structure and another is that they are especially liable to pressure in struggles that can not be avoided with the best of attendance. For this reason, it is believed that a reasonable amount of mechanical restraint by the padded straight jacket would be preferable to the uncertain action of the arms of a male attendant under the provocation of a struggle.

The Pathology of Chill.—W. Ringrose Gore (*Clinical Journal*, London, August 8) divides bacterial diseases into infective, in which the bacteria are introduced from without the body, and those in which the bacteria are present in the body but become active only after some interference with the natural immunity. The most frequent cause of the loss of immunity is an alteration of the secretions brought about by chilling the external surface. The altered character of the secretions has been shown for nasal catarrh by experiments which demonstrate that the bacteria of nasal catarrh do not grow well in normal nasal mucus, nor will the ordinary bacteria of the mouth and nose increase if incubated in healthy mucus, but that all these organisms grow rapidly in the secretion from the first stage of catarrh. As diseases which may be originated by chill he enumerates nasal catarrh, bronchitis, pleurisy, pneumonia, rheumatic fever, and, in some cases, intestinal catarrh. An important distinction between infective diseases and chill diseases, he states, is that an attack of the former confers immunity by an alteration of the blood while in the latter immunity depends on the protective action of the secretions, a renewal of the chill is followed by a renewed attack. The best method of prevention, he believes is the hardening of the body by cold bathing and careful exposure.

The Leech as a Means of Research in Regard to Toxic Causes.—Cajal has long called attention to the advantages of the common medicinal leech for purposes of scientific research. Its organs are so simple that they form practically a schematic diagram of the vital organs. The blood to be examined is ingested by the leech by the natural route, instead of the unnatural process of intraperitoneal or other inoculation. The changes in its neurofibrils are easily apparent and form a sensitive and reliable index of toxic action on the part of the blood ingested. R. Rebizzi, of Florence, reports in the *Rivista di Pathologia nerv. e. mentale*, June, 1906, a series of researches undertaken with the leech to determine the toxic cause of certain mental affections. It has recently been established that the neurofibrils react like the chromatic substance, even to non-elective stimuli, and this opens a wide field for research in regard to the action of toxins. Rebizzi announces among other points thus learned that dementia præcox in its early stages shows most decidedly the action of a toxic agent elective for the nervous system. After the nervous system has been injured by the toxin, the latter always vanishes from the blood so that in this, as also in alcoholic psychoses, the first intoxication and the permanent lesions it leaves are followed by no indications of the presence of an elective toxin in the blood later. He is convinced that the causal toxin in the majority of mental affections is of exclusively intestinal origin. The task now is to determine which bacteria in the intestinal flora are responsible, and to learn how to keep them under control.

Mortality Among Athletes.—Dr. Robert E. Coughlin, Brooklyn, N. Y., has been studying the fatalities in athletic games and deaths of athletes in 1905. In the *Medical Record*, June 2, 1906, he records 128 deaths, of which 78, or about 61 per cent., were due to accidents, distributed as follows: Football, 28; baseball, 12; horse racing, 9; boxing, 6; gymnasium exercise, golf, polo, bicycle coasting, handball, hammer throwing and wrestling, 3 each. Of the 50 deaths due to disease, 9 resulted from cerebrospinal meningitis, 8 from cardiac diseases, 7 each from pneumonia and pulmonary tuberculosis, 5 from Bright's disease, 4 each from appendicitis and typhoid fever, 1 each from apoplexy, suppurative tonsillitis, splenic anemia and senility; 2 were cases of suicide. The number of deaths due to cerebrospinal meningitis was exceptional, as this disease was epidemic last year. The average age at death of the athletes dying from accident was 20 years; that of the athletes dying from disease, 31 years. Among the causes of fatalities from accidents were: Abdominal injuries, dislocation of spine and paralysis, fracture of skull, cerebral hemorrhage, shock, cardiac failure, heat exhaustion, concussion of brain, fracture of spine, acute peritonitis. Dr. Coughlin's conclusions are that athletes are specially susceptible to cardiac lesions, pneumonic and infectious diseases generally; that football is the cause of an appalling number of serious injuries and fatalities, and that the aim of athletics should be not to cripple men, but to improve them.

Transmission of Disease by Pets.—The Journal commented on "The Pathologie Cat," July 21, page 209. Another warning on the danger from pet cats and dogs is from Remlinger and Nouri of Constantinople, who relate instances from their experience in which the strictest measures of isolation and disinfection were nullified by a pet cat allowed to roam through the house. They state: "There is scarcely a hospital or ward without its cat or cats, and they go from bed to bed and ward to ward seeking for tidbits and caresses which the convalescents are only too glad to bestow to while away the time." They describe in a communication to the newly founded journal, *Hygiène Gén. et Appliquée*, experiments with cats whose fur was touched with cultures of various bacteria. They found typhoid bacilli still alive and viable up to the seventeenth day after inoculation of the fur. Diphtheria bacilli were viable up to the twenty-fourth day, but were dead by the twenty-seventh, while anthrax bacilli lived and persisted indefinitely. All these germs were found with unattenuated virulence as long as they could be cultivated from the cat's fur. The results of similar tests on dogs were approximately the same. The article concludes with the statement that fondling cats and dogs is an antihygienic habit. Until the habit is abandoned for good, at least the hands should be washed with soap and water whenever one of these animals has been touched.

Lack of Legislation Regulating Practice of Medicine in Germany.—The lack of legislation regulating the practice of medicine in Germany is explained by an interesting historical sketch of "Charlatanism in Germany", published in the last *British Medical Journal*. It states that until 1869 Germany had a law regulating the practice of medicine, imposing a large fine or five months' imprisonment for the practice of medicine without being duly qualified. Another paragraph of the law imposed a penalty, ranging from $14 to $106, in the event of a medical man refusing his help in a case of danger or without sufficient excuse. In order to obtain the repeal of this last obnoxious paragraph, the Berlin Medical Society agitated the repeal of the law *in toto*, and finally accomplished its purpose, thus throwing down all barriers against the unlimited practice of medicine, although no one was allowed to assume the title of "Arzt" (physician) except those duly licensed. The profession in Germany has long rued its action in this matter.

The Best Medical Text-Books.—If the text-books most widely used in medical colleges are the best, considerable interest will attach to the summary, in *Medical Notes and Queries*, of the text-books recommended in the catalogues of 58 out of the 67 medical schools belonging to the American Association of Medical Colleges. The most commonly recommended books are as follows: Anatomy, Gray, Cunningham; histology, Huber; embryology, Heisler; physiology, American; chemistry, Remsen; pathology, Stengel; bacteriology, McFarland; materia medica and therapeutics, Wood, Hare; medicine, Osler, Tyson; neurology, Dana, Church and Peterson; pediatrics, Holt; obstetrics, Hirst; gynecology, Dudley; medical dictionary, Gould; ophthalmology, de Schweinitz; surgery, American International; laryngology, rhinology and otology, Kyle; Dench; dermatology, Crocker, Stelwagon; hygiene, Bergey, Harrington; toxicology, Taylor.

Book Notices

Pneumonite Crupale con speciale Riguardo alla sua cura. By A. Serafini. Cloth. Pp. 64. Price, L. 2.50. Milan, Italy: Ulrico Hoepli, 1906.

This little monograph on pneumonia, a disease which in this country, at least, has become one of the chief causes of mortality, we take to be the most recent statement of the current Italian view on the subject. The author says in his introduction that as a practical physician he has laid down what would seem to him the most rational principles of treatment and the methods which have given him the best results. He has also reviewed more or less extensively the facts as to the etiology, pathology, anatomy, symptomatology, etc., of the disease, and it may be taken as—for its size—a fairly exhaustive and critical discussion of the subject. Serafini holds that in the greater number of the cases the pneumococcus of Fraenkel is the responsible germ, the others being effective in smaller proportions. The contagion of the disease is recognized, though the importance of conditions affecting resistance is also noted and the effects of meteorologic conditions are not underrated. It would appear that in Italy the fall and spring are the seasons in which pneumonia is specially prevalent and its mortality highest, that of winter being noticeably less, except in certain localities. The author is not inclined to recognize an abortive type of pneumonia which some authors have claimed exists. Such cases he thinks are often more properly classified as manifestations of the influenzal infection. The figures as to the mortality of pneumonia differ widely in different localities, from 4 per cent. in some German figures to the 37 per cent. or 38 per cent. of the Paris hospitals, and the well-known high figures observed in some of our American cities. The prognosis therefore is somewhat uncertain, especially in view of the possibility of complicating infections. According to the author, jaundice is one of the most serious symptoms.

The part of the most interest, as the title of the work would seem to indicate, is that devoted to treatment, which comprises nearly one-third of the text. Dr. Serafini himself collaborated with Professor Pane in his earlier experiments with serotherapy, but his attitude on this matter is thoroughly impartial and judicial, and he advises against any too positive enthusiasm in regard to such methods. Both the Pane and the Tizzoni sera are noticed and he seems, to consider the latter even more unreliable than the former. Among the drugs specially noticed as recommended and employed by various authorities are digitalis, alcohol, potassium iodid, creosote inhalations, formic acid, and the various expectorants, revulsives, etc. He has not seen quinin modify the disease apparently, except to increase the blood in the expectoration or to make it appear when it did not before. The large doses advised by Aufrecht and in the Galbraith treatment are evidently not favored by the author.

Considerable space is given to the subject of blood letting in pneumonia, which the author himself advises in a moderate way. Subsequent injections of normal salt solution he considers not necessary with the ordinary amount of blood taken (200 to 500 grams). The rational treatment of pneumonia according to him, would consist in proper hygienic conditions of the sick chamber, keeping it at a temperature of about 20 C. with pure air, opening the windows for this purpose in winter for a few minutes at a time, avoiding excitement, using regular and nutritious diet, generally of milk (3 liters of which daily, affording 1,830 calories, being sufficient for nutrition), plenty of fresh water, acidulated with orange juice if necessary, the use of a purge of calomel or castor oil and moderate amount of blood abstraction in the first stage by leeches, together with the use of diaphoretics, sedatives to relieve fever, cough, pain, etc. The same general treatment should be continued through the second stage, but a larger blood depletion, 300 to 500 grams, from the arm is advisable when the infection has reached its acme. In the third stage the liquid diet may be gradually changed to mixed, and expectorants employed, as seems desirable. During the convalescence stage the ordinary tonics and tonic and reconstituent treatment generally is indicated. As regards the use of cardiac tonics he favors digitalis in generous doses when there is decided weakness and in severe cases injections of camphorated oil, one syringe every two or three hours of a 20 per cent. solution and possibly the use of alcoholic stimulation.

This work, like so many other of the Hoepli manuals, is a valuable digest of its subject, critically presented, according to the point of view of its author, and is not a mere uncritical compilation of the literature. The references are numerous and show the author's wide acquaintance with the literature of the subject.

Elements of General Chemistry, with Experiments. By J. H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Fourth edition. Revised and Enlarged. Cloth. Pp. 443. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

While, as stated in the preface of this revision, "most of the added matter is given in a chapter, not in the older editions,

on the theories of solution and the conditions of chemical equilibrium," yet the entire matter has been conscientiously revised by the author and brought up to date. Professor Long's large experience as a teacher of chemistry has enabled him to present the modern theories of solution, mass, action, etc., in a simple, direct manner, free from technicalities, which will appeal to students in medical schools. Throughout the book the author's effort is apparent to present to the student the fundamental facts of chemistry in a simple yet exact manner, and in this he is eminently successful. In our opinion, it is to be regretted that more attention is not given to chemical phenomena of direct interest to physicians; thus, although eight pages are devoted to the occurrence, history and metallurgy of iron, to the blast furnace and the nature of cast iron, wrought iron and steel, only four pages are given to the compounds of iron, their properties and behavior. Similarly, it seems that when considering mercury the theories and conditions of variation in combining power, oxidation and reduction could with profit have been taken up. In other words, would it not be desirable in a book for physicians to illustrate the principles of chemistry by examples of direct application to medicine rather than to base them on the metallurgy and processes of manufacture, which do not interest the student in medicine?

THE MORPHOLOGY OF NORMAL AND PATHOLOGIC BLOOD. By G. A. Buckmaster, D.M., University College, London, formerly Radcliffe Fellow, Magdalen College, Oxford. Cloth. Pp. 244. Price, $3.00. Philadelphia: P. Blakiston's Son & Co., 1906.

This volume contains the substance of a course of lectures delivered by the author in the Physiologic Institute of the University of London. Besides discussing the subjects embraced in the title of the work, Buckmaster also discusses the action of hemolysins, oxygen capacity, various chemical tests of blood, the biologic differentiation of bloods by means of precipitin tests, and a variety of other subjects ordinarily not classed under the term morphology. The author gives the result of his investigations into the question of polycythemia at high altitudes. In discussing the clinical pathology of the blood he protests against the excessive importance which is often attached to counts of red blood corpuscles to the neglect of the more instructive methods of investigation. The book is to be commended.

State Boards of Registration

COMING EXAMINATIONS.

NEW JERSEY State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

TEXAS State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonio.

FLORIDA Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernandez, Jacksonville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

KENTUCKY State Board of Health, Louisville, October 22. Secretary, J. N. McCormack, Bowling Green.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

NEVADA State Board of Medical Examiners, Carson City, November 5. Secretary, S. L. Lee, Carson City.

NEBRASKA State Board of Health, State House, Lincoln, November 7-8. Secretary, Geo. H. Brash, Beatrice.

MAINE Board of Registration in Medicine, Portland, November 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, November 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, November 13-14. Secretary, Edwin B. Harvey, State House.

WEST VIRGINIA State Board of Health, The Frederick, Huntington, November 13-15. Secretary, H. A. Barbee, Point Pleasant.

MISSOURI State Board of Health, Kansas City, November 26-28. Secretary, J. A. B. Adcock, Warrensburg.

Massachusetts July Report.—Dr. E. B. Harvey, secretary of the Board of Medical Registration in Medicine, reports the written examination, held at Boston, July 10-11, 1906. The number of subjects examined in was 11; total number of questions asked, 60; percentage required to pass, 70. The total numer of candidates examined was 153, of whom 117 passed, including 9 non-graduates, and 36 failed, including 20 non-graduates. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Yale University	(1905) 70.1, 72.8,	88.8
Medical School of Maine	(1883),* (1902)	70
College of P. and S., Baltimore	(1906) 77.1,	78.5
University of Maryland	(1906)	83.1
Johns Hopkins Med. School	(1902), 77.6; (1906)	82.3
Maryland Med. Coll.	(1905) 70,	74.3
Baltimore Med. Coll.	(1901) 72; (1904) 75.8; (1906), 70.5, 72, 72.6, 73.8, 74.8, 74.3.	
Harvard Med. School	(1904) 72.3, 72.5; (1905) 84.9; (1906) 70.6, 71.1, 72.1, 73.3, 73.3, 73.8, 75, 75.3, 76.3, 76.5, 76.6, 77, 78.1, 78.6, 78.8, 81.1, 81.1, 81.5, 81.6, 81.6, 82, 82.1, 83.	
Tufts Coll. Med. School	(1906) 70, 70.3, 70.8, 71, 71.1, 71.6, 72, 72.1, 72.3, 72.5, 72.6, 72.6, 72.8, 73, 73.1, 73.3, 74.3, 75, 75.1, 75.1, 75.5, 75.8, 76.3, 76.3, 76.5, 77, 77.5, 78.3, 78.5, 79.8, 80, 80.5, 81, 82.6.	
Boston University	(1904) 70; (1905) 74.1; (1906) 70, 70.1, 70.1, 71, 71.5, 72.4.	
University of Michigan	(1895) 77.8; (1905) 75.5; (1906) 70.5,	83.1
Long Island Coll. Hospital	(1906)	71.6
Dartmouth Med. Coll.	(1906) 74.8,	75
University of Pennsylvania	(1900) 70.6,	75.2
Woman's Med. Coll. of Pennsylvania	(1906) 72.5,	80.8
Jefferson Med. Coll.	(1906)	74
Hahnemann Med. Coll., Philadelphia	(1905) 72.5; (1906)	70.3
University of Vermont	(1906) 72.2, 75.8,	76
Syrian Protestant College, Beirut	(1891)	71

FAILED. College.		
College of P. and S., Baltimore	(1905)	57.6
Baltimore University	(1903) 63;	63.8
Baltimore Med. Coll.	(1906) 63.1,	66.6
Maryland Med. Coll.	(1906)	66.6
Boston University	(1906) 65, 65.1,	68.3
University Med. Coll., Kansas City	(1899)	58.5
Eclectic Med. Coll., New York	(1905)	55
University of the South	(1906)	64.9
Laval University, Quebec	(1906)	62
Harvard Med. School	(1906)	66.3
University of Naples	(1904)	66.4

* No percentage given.

Oregon May and July Reports.—Dr. Bryan E. Miller, secretary of the Board of Medical Examiners of Oregon, reports the written examinations, held at Portland, May 10-12 and July 11-13, 1906. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75.

At the May examination the total number of candidates examined was 44, of whom 19 passed and 25 failed, including one non-graduate. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
University of Southern California	(1900)	79.4
Rush Med. Coll.	(1891)	81.8
University of Iowa	(1892)	76.6
University of Iowa, Homeo Dept.	(1899)	76.7
University of Michigan	(1894)	75.6
University of Minnesota	(1899)	82.6
University of Oregon, (1906) 77, 77.5, 78.5, 79.7, 80.1, 80.6, 81.2, 82.7, 82.8, 83.6.		
Willamette University	(1906)	80.3
University of Virginia	(1900)	75.3
Trinity Med. Coll., Toronto	(1906)	78.3

FAILED. College.		
Denver and Gross Med. Coll.	(1888) 74.6; (1904)	72.4
Northwestern Univ.	(1904)	73.6
Southern Homeo. Med. Coll.	(1897)	67.5
St. Louis University (Marion-Sims-Beaumont Med. Coll.),	(1904) 72.	
Ensworth Central Med. Coll.	(1906)	69.7
Lincoln Med. Coll.	(1903)	72.4
Eclectic Med. Inst., Cincinnati	(1903)	74.9
Willamette University, (1906) 59.6, 61.9, 64.2, 69.4, 69.7, 70, 71.7, 72.1, 72.6, 73.2.		
University of Oregon	(1906) 66.8, 69.6, 73.9,	74.2
University of Vermont	(1905)	67.6
Laval University, Montreal	(1904)	67.5

At the July examination the total number of candidates examined was 44, of whom 21 passed and 23 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Cooper Med. Coll.	(1906) 80.2,	85.9
Denver and Gross Med. Coll.	(1904)	75.6
Hahnemann Med. Coll., Chicago	(1899)	80.6
Hering Med. Coll., Chicago	(1905)	75
Rush Med. Coll.	(1903) 82.7; (1904)	81.9
Northwestern Univ. Med. School	(1904) 82.8; (1906)	84.3
College of P. and S., Chicago	(1906) 81.8,	82.4
Tulane University	(1906)	82
Johns Hopkins Med. School	(1906)	91.7
Harvard Med. School	(1905)	84.6
Eclectic Med. Inst., Cincinnati	(1903)	83.1
Willamette University	(1906)	75
University of Oregon	(1906)	82.8
Jefferson Med. Coll.	(1905) 78.9; (1906)	80.3
University of Toronto	(1904)	84
University of Munich, Germany	(1905)	76.2

FAILED.

Denver Homeo. Med. Coll.	(1906)	68
American Med. Miss. Coll.	(1899)	69.4
Bennett Coll. Eclec. Med. and Surg., Chicago	(1906)	68.1
Rush Med. Coll.	(1903)	70
College of P. and S., Chicago	(1902) 69.7; (1904)	59
Tulane University	(1893)	72.8
Southern Homeo. Med. Coll.	(1897)	73
University of Michigan	(1872)	71.4
University of Michigan Homeo. Dept.	(1906)	72
Detroit Coll. of Med.	(1896)	66
Washington University	(1887)	65.8
Barnes Med. Coll.	(1903)	73.7
Medico-Chirurgical College, Kansas City	(1905)	73.1
Willamette University	(1906) 60.1, 64.8, 67.2,	68.6
University of Oregon	(1906) 65.9, 71.8,	72.6
University of Vermont	(1905)	60.4
Laval University, Montreal	(1904)	63.9

Wisconsin July Report.—Dr. J. V. Stevens, Secretary of the Wisconsin State Board of Medical Examiners, reports the written examination held at Madison, July 10-12, 1906. The number of subjects examined in was 15; total number of questions asked, 140; percentage required to pass, 75. The total number of candidates examined was 37, of whom 33 passed, 2 failed, and 2 were conditioned. Forty reciprocal licenses were granted, including 2 Osteopaths. The following colleges were represented:

PASSED.

College.	Year Grad.	Number Examined.
Rush Med. Coll.	(1906)	3
College of P. & S., Chicago	(1906)	2
American Med. Miss. Coll.	(1905)	1
Northwestern Univ. Med. School	(1906)	1
Illinois Med. Coll.	(1906)	1
Johns Hopkins Med. School	(1906)	2
Milwaukee Med. Coll.	(1906)	10
Wisconsin Coll. of P. & S.	(1906)	10
University of Toronto	(1906)	1
Western University, Canada	(1906)	1

FAILED.

Northwestern Univ. Med. School	(1895)	1
Wisconsin Coll. of P. & S.	(1906)	1

REGISTERED THROUGH RECIPROCITY.

	Year Grad.	Reciprocity with
Northwestern U. M. S.	(1902), (1904), (1905, 2), (1906)	Illinois
Rush Med. Coll.	(1887), (1902), (1903), (1904, 3)	Illinois
Coll. of P. & S., Chicago	(1903), (1905, 2), (1906, 4)	Illinois
Illinois Med. Coll.	(1906)	Illinois
Hahnemann Med. Coll., Chicago	(1906)	Illinois
Bennett Coll. of Eclec. Med. & Surg.	(1896)	Iowa
Keokuk Med. Coll.*		Iowa
Keokuk Med. Coll.	(——)*	Iowa
Louisville Med. Coll.	(1887)	Iowa
Baltimore Med. Coll.	(1905)	Iowa
College of P. and S., Baltimore	(1900)	Minnesota
Detroit Coll. of Med.	(1906)	Michigan
Michigan Homeo. Med. Coll	(1906)	Michigan
University of Minnesota	(1905)	Minnesota
University of Minnesota	(1906)	Illinois
Missouri Med. Coll.	(1897)	Illinois
St. Louis Univ. (Marion-Sims-Beaumont Coll.)	(1906)	Illinois
Western Reserve University	(1905)	Ohio
University of Vermont	(1890)	Illinois
Queen's University, Canada	(1895)	Illinois

*Year of graduation not given.

The following questions were asked:

PRINCIPLES AND PRACTICE.

1. In a comprehensive way give the causes of disease in man. 2. Give differential diagnosis and treatment of ulcer of the stomach. 3. Give etiology and treatment of sciatica. 4. Give differential diagnosis of typhoid, rotheln, scarlatina, varicella, variola. 5. What is autointoxication? Give source of the toxins causing disease in man. 6. Define all the valvular lesions of the heart and give etiology, prognosis and differential diagnosis. 7. Give diagnosis, prognosis and symptoms of acute uremia. 8. What is ascites? Give etiology in full. 9. What effect has urea on the human organism? 10. Give differential diagnosis between appendicitis and cholecystitis.

OBSTETRICS.

1. Describe the physiology of ovulation and menstruation. 2. Give the anatomy of the uterus and its appendages, including nerves and blood vessels. 3. What are the conjugate and transverse diameters of the superior and inferior straits of the pelvis? Give anatomic points of measurement. 4. In a case of firmly contracted uterus and persistent hemorrhage, what would you suspect and what would you do? 5. Give five conditions in labor, any one of which would warrant instrumental interference and give technic of use of forceps. 6. Give clinical history, method of prevention and treatment of puerperal eclampsia. 7. Give causes, diagnosis, prognosis and treatment of puerperal phlebitis. 8. How would you manage a case of prolapsed funis? How one of short funis? 9. What means would you employ to resuscitate a still-born child? 10. Name three oxytocic agents and give indications for their use.

ANATOMY.

1. Give the origin, insertion and function of the gastrocnemius, sternocleidomastoid and biceps muscles. 2. Describe the femoral vein and sciatic nerve. 3. Describe the femur. 4. Describe the brachial plexus. 5. Describe the inguinal canal; Poupart's ligament; and name the principal coverings of inguinal hernia. 6. What is the abdomen? Name its contents. 7. Name and give a brief description of the membranes of the brain. 8. Describe the heart, and name the important vessels leading into it. 9. Describe the brachial, radial and ulnar arteries. 10. Name the bones entering into the formation of the ankle joint.

MATERIA MEDICA AND THERAPEUTICS.

1. Describe the actions of potassium iodid, giving in full its actions; a. In small doses; b. in large doses; c. its manner of elimination; d. its therapeutic uses. 2. Describe the physiologic actions, the active principle and therapeutic uses of *Glandulæ suprarenales siccæ*, U. S. P. 3. What accidents are liable to occur during the administration of ether as an anesthetic? Describe in full how they are to be avoided. 4. What are the following substances and of what strength should they be in order to be up to the standard of U. S. P., pepsin, pancreatine? 5. On what principles do medicines act as diuretics? Describe physiologically how this is done, giving an illustration in each case. 6. What is plumbism, and how is it brought about? 7. Name eight drugs which act as antihelmintics. 8. Give therapeutics of hypodermoclysis. 9. Give source, composition and therapeutics of the following antitoxins as they are now known: Antidiphtheritic serum, tetanus antitoxin, anti toxin of bubonic plague, antistreptococcus, antipneumococcus, anti tuberculous and anti anthrax serum. 10. Give treatment of poisoning by carbolic acid.

DIETETICS.

1. Define dieting. 2. Classify components of organic food. 3. Give comparative value in calories of protein, starch or sugar and fat. 4. Prescribe a course of diet in a case of typhoid fever. (adult) during period of fever and also during convalescence. 5. Prescribe a course of diet in a case of diabetes mellitus.

HYGIENE.

1. What is meant by the term disinfection? Name five disinfectants and give in detail the manner of using them. What is a deodorant? 2. Give the source of the contagion of typhoid fever. How may it be conveyed and how may the disease be prevented from spreading? 3. Give practical method of ventilating an ordinary unventilated room. At what temperature should it be kept in a case of pneumonia, diphtheria, scarlatina, measles or smallpox? 4. What is best general method of purifying drinking water? 5. How long after recovery would you keep under quarantine a case of diphtheria, scarlet fever or smallpox?

PATHOLOGY.

1. Define inflammation and explain the phenomena of inflammation in the order of their occurrence. 2. Give the etiology of acute endocarditis and describe the pathologic changes in structure throughout its course, limiting your description to a mitral valve. 3. Discuss the causes and structural changes in a case of arteriosclerosis. 4. Trace in the order of their occurrence the gross and microscopic changes that take place in a lung affected with lobar pneumonia. 5. Name the degenerative or retrogressive processes and describe one of them. 6. Briefly outline Ehrlich's side-chain theory of immunity, and explain the action of diphtheria antitoxin. 7. (a) Give the kinds of infarcts, where they are found and causes of their formation. (b) Give the pathologic changes which take place in a Peyer's patch throughout the course of typhoid fever. 8. Describe a small contracted kidney, giving the gross and microscopic appearance. 9. Make a drawing of a miliary tubercle in the lung and show condition of surrounding lung tissue. 10. Classify the animal parasites causing disease in man, and describe the pathologic condition caused by any one of them.

CHEMISTRY.

1. Name the halogens and describe one of the group. 2. Define the following terms and give an example of each: (a) Water of crystalization, (b) binary compound, (c) double salt, (d) double decomposition. 3. Express by equations the chemical reactions when the following substances are combined: (a) Barium dioxid and sulphuric acid, (b) slaked lime and sal ammoniac, (c) lead acetate and sulphuretted hydrogen, (d) Manganese dioxid, sodium chlorid and sulphuric acid. 4. Give the formula for three insoluble carbonates and three insoluble chlorides. 5. Discuss the element mercury. 6. Describe in detail three reliable tests for albumin in urine other than the heat test. 7. Give the chemical test for free HCl in gastric contents and write equation to show reaction. 8. Describe the diazo reaction and give its diagnostic value. 9. Give two reliable tests for sugar in urine and write equations for reactions in each case. 10. Write the formula for chloroform, wood alcohol and marsh gas, and describe any one of them.

MEDICAL JURISPRUDENCE.

1. Differentiate between lunacy and idiocy. 2. What is the difference between civil and criminal malpractice? 3. How could you positively decide that an infant had died since birth instead of being a "still-born child"? 4. What rights does a physician have in refusing to testify as a medical or surgical expert unless he is allowed fees as an expert? 5. Define infanticide and state whether it is ever justifiable and if so what steps would you take to protect yourself in such a case.

TOXICOLOGY.

1. Name five vegetable poisons and an antidote for one of them. 2. Give treatment for poisoning by swallowing mercuric chlorid. 3. How would you detect arsenical poisoning? Give treatment for a case. 4. How would you diagnose and treat a case of poisoning by phosphorus? 5. What is carbolic acid (chemically speaking)? Name an antidote for it.

SURGERY.

1. Differentiate asepsis and antisepsis, and illustrate their principle in applied surgery. 2. Differentiate the uses of chloroform and ether anesthesia, and give contraindications in the use of each. 3. Define a Pott's fracture and a Colles' fracture and give treatment for each. 4. Describe the different dislocations of the shoulder joint, and give the methods of reduction. 5. Give history and treatment of osteomyelitis, acute and chronic. 6. Diagnose and give treatment for strangulated hernia and describe some one oper-

ation for the radical cure of inguinal hernia. 7. Give varieties and treatment of fistula in ano, and give the radical treatment of hemorrhoids. 8. Give history and treatment of acute appendicitis and acute cholecystitis. 9. Give the cardinal principles in use in making amputations of the extremities, and describe a Chopart amputation. 10. Give the cardinal principles in use in the treatment of fractures, and describe (the) treatment for a fracture of the patella.

GYNECOLOGY.

1. Give diagnosis and treatment of extrauterine pregnancy. 2. Give varieties and treatment of tumors of the uterus, and differentiate malignant from non-malignant. 3. Diagnose salpingitis and pyosalpinx and give treatment in each. 4. Give varieties and treatment of tumors of the ovary. 5. Give varieties and treatments of malpositions of the uterus, and name the important operations used, describing any one of them. 6. Give diagnosis and treatment of metritis and endometritis. 7. Define urethral caruncle and vesicovaginal fistula, and give the treatment for each. 8. Describe operations of choice in a given case of lacerated cervix uteri and of ruptured perineum. 9. Describe treatments of choice in given cases of vaginitis, urethritis, vulvitis and pruritis. 10. Give the most common causes and results of acute pelvic inflammation with treatment.

PHYSIOLOGY.

1. Locate and describe and give functions of glomerulus of the kidney. 2. How is the normal temperature of the body maintained? 3. What are the chief differences of function between the cerebro-spinal and sympathetic nervous systems? 4. Describe and give functions of the spleen and pancreas. 5. What are the changes in bread during its digestion, and where does each occur? 6. How many kinds of muscular tissue are found in the body? Describe each. 7. Give the physiology of vision. 8. Give the origin, function, and the relative number of the different kinds of blood corpuscles in the healthy body. 9. What are the functions of the vagus nerve? 10. Describe the chemical interchange between blood and air during respiration and mention the forces concerned in this interchange.

URINALYSIS.

1. Give test for chlorids. 2. Give test for sugar. (a) albumin. (b) uric acid. 3. Of what significance is the urea found in urine? 4. Give direction for collection of urine examination. (a) When should specimens be voided to give best results? (b) Outline your method of procedure in examining suspected urine. 5. Give test for blood in urine. 6. Give constituents of normal urine. (a) How are they determined? 7. What are the tests for urinary calculi? (a) Give composition of urinary calculi. 8. How do you take specific gravity? What is the significance of abnormal deviation in specific gravity of urine? 9. How would you detect bile in urine? 10. What is mucin? How detected?

BACTERIOLOGY.

1. What is phagocytosis? What is diphtheritic antitoxin? 2. Describe the mosquito theory of the spread of yellow fever. 3. Give the bacteriology of chronic phthisis and describe reversion of type. 4. Describe a method of making a plate culture, and a stab culture. 5. Describe the Klebs-Loeffler bacillus. What is Koch's postulate?

HISTOLOGY.

1. Name the leucocytes and describe each. 2. Diagram a typical mucous membrane and name the structures composing it. 3. Name the varieties of epithelium, and describe each. 4. Describe a Peyer's patch and state where found. 5. Draw diagram of a lobule of the liver, and describe it.

PHYSICAL DIAGNOSIS.

1. Differentiate between diphtheria and follicular tonsillitis. (a) Scarlet fever and measles. 2. Diagnose a typical case of acute enterocolitis. 3. What are the symptoms of lobar pneumonia? (a) Pleurisy with effusion? 4. What are the various methods used in making a physical diagnosis? (a) Give a plan or system by which you may be reasonably sure of arriving at a correct diagnosis. 5. Differentiate between neuritis and neuralgia. 6. Give signs of suppurative appendicitis. (a) Recurring appendicitis. 7. Give the differential diagnosis of smallpox and chickenpox. 8. Give the differential diagnosis of eczema, acne and urticaria.

Travel Notes

DISEASES AND HOSPITALS OF AFRICA.

NICHOLAS SENN, M.D.

Professor of Surgery in the University of Chicago; Professor and Head of the Surgical Department, Rush Medical College.

CHICAGO.

(*Concluded from page 1099.*)

THE HOSPITALS OF PRETORIA AND CAPE TOWN.

The road from Cape Town to Vynberg, over which the tramway passes, is lined on both sides with veteran oak trees, which the Dutch imported and planted more than a century ago. They are not the tall smooth-stemmed proud oaks of our forests but low, knotty, many-branched trees, which have managed to live and to attain extreme old age, on this to them foreign soil, but would look strange and unfamiliar to their kin in their native land. On this road, 15 minutes from Rondebosch station, is the famous "Groot Schuur," (Great Barn), one of the many African residences of the late Cecil Rhodes. The palatial house built in Dutch style is in the midst of a magnificent flower garden in an open place surrounded by a dense forest of indigenous and planted trees. The location is an admirable one for a restful retreat and which the great statesman and financier must have enjoyed when he took the time to leave his work and take a rest. The house is now occupied by Premier Jameson, of Jameson Raid notoriety—a strange piece of history.

The present population of Cape Town is about 100,000, including the natives. The natives here resemble in every respect the colored people of our northern cities and are engaged in similar employments.

SOMERSET HOSPITAL.

This is the only hospital in Cape Town. A large, centrally located dispensary takes care of the bulk of the sick poor who do not require hospital treatment, thus relieving the congestion in the out-door department of the hospital. The hospital was built forty-five years ago and has undergone many material alterations since that time and has been enlarged, with the increasing number of patients seeking admission. It is beautifully located near Green Point and the docks of the Union Castle Steamship Company facing the spacious harbor. The front of the building is stone and cement; its many windows, wide entrance, two corner towers and the ornamental grounds in front of it give it the appearance of a royal mansion, rather than that of a home for the sick.

The interior of the hospital leaves much to be desired to meet the requirements of such an institution in these days of hospital perfection and it is strange that such an old city with its many citizens of wealth should not have arranged before this for the necessary changes which are urgently needed. A staff of eight doctors, four surgeons and four physicians, each of them with a long string of capitals behind their names, a resident surgeon and three resident medical officers are in charge of the sick and injured. The only specialists are an opthalmologist and a dental surgeon. In none of the African hospitals I have visited have I found a gynecologist, although pelvic surgery forms an important item in the hospital reports. Pelvic surgery is included, as it should be, in general surgery, and constitutes a part of the legitimate work of the attending surgical staff.

The Victoria Nurses' Home, in the same grounds, is nearing completion at a cost of about $33,000. It is a handsome two-story brick building and when ready for occupancy will meet one of the urgent needs of the hospital. The nursing is in charge of nine ward sisters, one night superintendent, one operating theatre superintendent, and 36 probationers. The report of the hospital for 1905 shows that *amour* does not disdain to enter here, as elsewhere, the sanctity of a hospital, as during the year two ward sisters and four nurses resigned from the nursing staff to be married. Of 116 applicants to enter the training school, only 22 were accepted, and many of the probationers left during the first three months, owing to unsuitability.

The hospital has space for 191 beds, including the two wards for natives. At the time of my visit only the children's ward was full. In the other wards half of the beds were not occupied. As in South Africa, it is during the summer months that the hospital has the largest number of patients. As the institution takes care of all sailors who require hospital treatment, its inmates represent many nationalities and languages. The total number of patients treated during the year was 1977; 1,190 were Europeans and 636 colored. Of this number 176 died, 87 Europeans and 83 colored. The last two figures attract attention when we consider the small number of blacks who are in the hospital, as compared with the whites.

The average daily cost per in-patient was $1.55. The total maintenance expenses amounted to over $100,000. Toward meeting the running expenses of the hospital, the government grant of $55,000 furnishes the bulk, the income from paying patients is a little over $10,000 and the balance of the expenses is made up by subscriptions, donations and collections. Among the donations, one appears in the list like this: "U. S. America Government appropriation, as contributed to hospital per Horace Lee, Washington, American consul general, pounds 10, 2s., 8d."

This hospital appears to have more grateful, appreciative patients than others, as in the list of donations marked, "Grateful patient," one contributed $50.00, another $2.50, one $5.25, and a third one $10.00.

The clinical material of the hospital is not of special interest to the surgeon, as it is almost identical with that of any hospital in the eastern, western and middle states. In the children's ward, I saw a child, three years old, recently operated on successfully by the bloodless method for double congenital dislocation of the hip joint. I was told that it was the first operation of the kind in Africa. In the same ward was a little girl who had been repeatedly operated on for exstrophy of the bladder. The first operation of Maydl's method—implantation of the trigone of the bladder into the large intestine—failed. Subsequent plastic operations finally succeeded in procuring a cover of skin flaps for the exposed and bulging posterior wall of the bladder. Tuberculosis of the lungs is very frequent.

The report states: "The number of cases of tuberculosis is remarkable. The cases we get are generally far advanced and the ravages of this terrible disease, especially among the colored people, are truly appalling." Many of the negroes afflicted with the disease die in three months from diffuse miliary tuberculosis. The mortality of tuberculosis in Cape Town is increased by patients coming from Europe, too late to be benefited by change of climate and who are too sick to return to their homes with any hope of reaching their destination alive.

The beds of typhoid patients in the general ward have a white instead of a blue bedspread to distinguish them from the other patients, which at once reminds the visitors and nurses of the nature of the disease of their occupants. In the ward for colored women, I examined a patient who was suffering intensely from advanced carcinoma of the pyloric end of the stomach. The woman was a half caste about 40 years of age. I must repeat here in completing my account of hospitals and diseases of Africa that what I have emphasized a number of times has been confirmed by subsequent observations, viz.: 1. The pure-blooded negro is almost, if not entirely, immune to carcinoma and inflammatory diseases of the appendix. 2. In consequence of adoption of civilized habits and change of food and especially by the admixture of the blood of the whites, he gradually loses this immunity and becomes subject to all the diseases of the whites, including carcinoma and appendicitis.

The farther I got away from the real primitive negroes of the east coast of Africa, the more frequently I heard of the occurrence of these diseases among the negroes, who for fifty years and longer had been under the influence of civilization, and most of the patients were half castes.

On board S. S. *Kildonan*, July 20.

Medical Organization

THE CARROLL COUNTY (GA.) MEDICAL SOCIETY.

J. F. Cole, M.D., Secretary.

CARROLLTON, GA.

The Carroll County Medical Society has been in existence continuously since 1865. It is, of course, a member of the State Medical Association. During the dark reconstruction days following the Civil War, the society struggled and held its own, its lines falling in more pleasant places as the times improved.

To-day we present almost a solid phalanx, every medical practitioner in Carroll County, with the exception of two non-eligibles, being active members in good standing. Never in the history of the society have the doctors of the county come so near being a unit. We are all standing together, shoulder to shoulder, each doing his utmost to make smooth the rough places of his brother. We are enthusiastic; we are in earnest. There is no county society in the whole country which has less of backbiting, strife and unprofessional hammer and tongs. Each member tries to upbuild and to uphold our glorious profession, to follow the Golden Rule, to pattern after the Great Physician.

The meetings of the society are held at 10 a. m. on the third Tuesday in each month, in the office of the secretary. After the routine work, cases of interest are reported and discussed and clinics are held, which are both instructive and interesting. After one hour's adjournment for dinner, business is again resumed and then follows the reading and discussion of scientific papers. On file in the archives of the society will be found many masterly and highly instructive papers.

At our October (1906) meeting we will have a banquet at which will be present some of the most eminent practicians in the state. We anticipate a glorious time.

On the question of fees for life-insurance examinations we are an absolute unit. Every member has signed the schedule of fees, viz., $5 for examination with urinalysis, or $3 without urinalysis; $10 where microscopic examination is required. Those insurance companies who refuse to pay our fees are not selling any insurance in the county, but those paying fees are getting the business, for every doctor in the county who is an examiner naturally throws his influence to those companies who comply and against those who do not. More than that, we will not accept a reduced fee from the company and the rest of the $5 from the agent. We took that action in order to bring the matter to a focus. Certain companies have attempted to bring neighboring physicians into the county to do the examining, at the reduced fees, but the companies were informed that the plan would not work. We are standing for our rights, and we determine what our professional services are worth. Those insurance companies which do not pay a $5 fee might just as well move out of the county; their business here will be slim.

We are flourishing as the green bay tree. Each stands for his profession and for rights. We are proud of our society.

Missouri.

SCOTT COUNTY MEDICAL ASSOCIATION.—A medical association has been organized at Benton with the following officers: Dr. Theodore F. Framer, Commerce, president; Dr. Richard A. Sparks, Blodgett, vice-president; Dr. Uriel P. Haw, Benton, secretary; Dr. Pleasant W. Malcolm, Sikeston, treasurer, and Drs. William H. Westcoat, Oran; Garnett S. Cannon, Fornfelt, and Henry Rodenmeyer, Kelso, censors.

Kansas.

COFFEY COUNTY MEDICAL SOCIETY.—With the assistance of Dr. J. E. Sawtell, Kansas City, councilor for the seventh district, a county medical society was organized at Burlington on the standard plan with the following officers: Dr. John C. Fear, Waverly, president; Dr. Harry T. Salisbury, Burlington, vice-president; Dr. Drury B. Rowe, Le Roy, secretary; Dr. William H. Mathias, Waverly, treasurer, and Drs. Alexander K. Berry, Granville R. Norris and Verbinia McMullen, all of Burlington, censors.

Kentucky.

ADAMS COUNTY MEDICAL ASSOCIATION.—The physicians of Adams County have organized a medical association with Dr. R. Y. Hindman, Columbia, president, and Dr. Uriah L. Taylor, Columbia, secretary.

CRITTENDEN COUNTY.—The physicians of Crittenden County met at Marion and reorganized the Crittenden County Medical Society, with the following officers: Dr. Jr Ernest Fox, Levias, president; Dr. William T. Daughtrey, Marion, secretary.

Maryland.

QUEEN ANNE COUNTY MEDICAL ASSOCIATION.—The Queen Anne County Medical Association has been organized with the following officers: President, Dr. James M. C. Corkran, Centerville; vice-president, Dr. Wilmer Adams, Wye Mills, Talbot County; secretary, Dr. Howard R. Hopkins, Queenstown, and delegate to the Medical and Chirurgical Faculty, Dr. John H. W. G. Weedon, Church Hill.

Michigan.

KENT COUNTY MEDICAL SOCIETY.—This society, which was recently organized, has adopted the constitution and by-laws recommended by the American Medical Association for county societies.

Minnesota.

DAKOTA COUNTY MEDICAL ASSOCIATION.—Through the efforts of Dr. E. Franklin A. Dodge, La Sueur, councilor for the seventh district, and Dr. Thomas S. McDavitt, St. Paul, secretary of the state medical society, the Dakota County Medical Society was reorganized at Hastings, with the following officers: Dr. Julius C. Fitch, president; Dr. Thomas A. Caldwell, vice-president; Dr. H. H. Hazeltine, secretary; Dr. Henry G. C. Van Beeck, treasurer, and Drs. Alexander C. Dockstader, Alfred M. Adsit and Llewellyn D. Peck, censors, all of Hastings.

Society Proceedings

COMING MEETINGS.

American Association of Railway Surgeons, Chicago, Oct. 17-19.
Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8.
Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.
American Public Health Assn., Mexico City, Dec. 3-7.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Nineteenth Annual Meeting, held at Cincinnati, Sept. 20-22, 1906.

(*Continued from page 1128.*)

Intestinal Obstruction Due to Gallstones.

Dr. Miles F. Porter, Fort Wayne, Ind., said that gallstones may obstruct the bowel in five different ways, obturation being the most usual form, and is more common in females past middle life. The stone may get into the bowel through the common duct, but usually enters from the gall bladder by obturation, via the duodenum, and may lodge anywhere from the pylorus to the anus, but in the majority of cases it is found in the ileum. As a rule, the gut is not damaged, but gangrene and perforation occur if the obstruction is not relieved promptly. The symptoms are those of acute, but often not complete obstruction of the bowel. A previous history of gallstone disease is found in most cases. A migrating tumor originating in the gall bladder, or a stationary tumor of egg-size and shape, and hard, are of great diagnostic value, but are absent in most cases. Tenderness and rigidity are not present until late. Shock is not marked. Multiple attacks of bowel obstruction are significant of gallstone ileus. Exploratory incision is the best means of making the diagnosis in the majority of cases. The mortality is 50 per cent. This large mortality is due in no small measure to the advice given by many authors to delay operation until a fair trial of medical treatment, massage, etc., has failed. The mortality might be reduced to 5 per cent. by prompt surgical interference. He reported two cases in women past 40, who had had previous gallstone trouble; the stone lodged in the ileum in both cases. In one case a tumor near the gall bladder disappeared before obstruction came on. One woman, treated medically, died; the other recovered after enterostomy.

Diagnosis and Treatment of Accidental Uterine Hemorrhage.

Dr. Adam H. Wright, Toronto, said that the following procedures are conspicuous in this regard: Rupture of the membranes, plugging the vagina, forcible delivery, and Cesarean section. The mortality rate of forcible delivery, when the patient is suffering from shock and the uterus is tetanically contracted, is, in his opinion, 100 per cent. A certain amount of force might, however, be used under certain circumstances. For instance, the obstetrician may have ruptured the membranes before the os was dilated; there might still be considerable hemorrhage, making an early emptying of the uterus advisable. In such a case manual dilatation of the os with version or forceps delivery might be advisable. It is doubtful, however, whether such manual dilatation under such circumstances could be designated forcible delivery. He has had no experience with vaginal or abdominal Cesarean section for accidental hemorrhage. In the case of either concealed or combined internal and external accidental hemorrhage, with the patient suffering from shock and a cervix as hard as iron, any operation probably would be unjustifiable. The shock should be treated, and if in spite of such treatment the symptoms of shock grow worse instead of better, the patient is probably going to die. If, on the other hand, the patient recovers from the shock, it is certain that in some cases, if not in the majority, serious operation is not advisable. It might happen, however, that internal hemorrhage is taking place into a uterus whose walls are stretching rapidly, and the loss of blood is the chief factor. If, in such an emergency, it is not possible to dilate the os, and deliver soon enough to save life, some form of Cesarean section might be deemed advisable.

Diffuse Peritonitis.

Dr. John B. Murphy, Chicago, reported 36 cases of general suppurative peritonitis from perforation, with one death. In treating this condition he emphasized the importance of relieving pressure and of instituting drainage, doing as little surgery as possible. The patient should be put in a sitting position both before and after operation, so as to keep the infective material out of the diaphragmatic zone, and not the pelvic zone. At the time of operation the patient usually has all the infection he can carry; he is handicapped, and it is the duty of the surgeon to eliminate that infection or intoxication as much as possible, and in doing so care should be taken not to abrade any more surface so as not to admit more infective material. The patient should be tided over for a few hours and his local resistance built up by washing out the blood with normal salt solution. Antistreptolytic serum should be employed and little or no food given.

Abuse of Purgatives.

Dr. Edwin Walker, Evansville, Ind., said that purgatives are used by the public and profession under widely adverse conditions. This promiscuous use does much harm. The best authors differ as to the physiologic action of purgatives. There is a close resemblance between infections of the intestinal canal and the action of purgatives. All of these considerations suggest care in the use of cathartics. In constipation purgatives are contraindicated; in diarrhea they are limited in value. Biliousness is too vague a term to be considered an indication for their use. They should rarely be used in the preparation for surgical operation or the complications following. Increased knowledge will no doubt materially curtail their use.

Factors Which Have Lowered Operative Mortality and Have Improved Postoperative Results.

Dr. X. O. Werder, Pittsburg, Pa., attributed his better results both in regard to operative mortality as well as postoperative morbidity to (1) A more simple and better aseptic technic, including the wearing of rubber gloves; (2) better diagnosis and more careful preparation of the patient, especially the acute inflammatory cases, whose abdominal section is delayed at least three weeks after the subsidence of all acute symptoms; (3) the employment of a trained, absolutely reliable first assistant; (4) centralization of all operative work, enabling the operator to give the greatest amount of personal attention to his patients; (5) the careful closure and covering of all raw surfaces in the peritoneal cavity; (6) the exclusive use of catgut prepared under personal supervision; (7) a trained anesthetist who administers a minimum amount.

Management of Bowel of Doubtful Vitality in Operations for Relief of Strangulated Hernia and Intestinal Obstruction.

Dr. Rufus B. Hall, Cincinnati, said that these cases can be divided into three groups as soon as the operation has progressed to the stage where it can be inspected. 1. Those cases where it is evident that a resection is not necessary. 2. Those cases in which it is certain that a resection must be made. 3. Those cases in which the surgeon is in doubt as to the vitality of the injured portion of bowel. His method of treating this condition consists in employing a single layer of iodoform gauze, about three inches wide, placing it against one side of the mesentery and carrying it over the diseased bowel until it rests on the mesentery on the opposite side, extending a couple of inches beyond the bowel of doubtful vitality on each side and placing this loop of bowel surrounded by the gauze just inside of the abdomen. The wound is dressed, if it is intra-abdominal, by leaving one or two stitches untied; if it is a hernia operation, the end of the gauze surrounding the bowel is left projecting out of the wound a foot or more, so that there is no danger of loosening it inside. The method is not applicable in all kinds of bowel injury, and is not advised except in certain definite conditions and surroundings.

Utilization of Broad and Round Uterine Ligaments in Supravaginal Hysterectomy.

Dr. Walter B. Dorsett, St. Louis, pointed out that in impacted cases of myomatous uteri, as well as in cases of large abdominal tumors of the uterus, a tendency to a shortening of the vagina follows the operation, and a sacculation of the bladder also is apt to ensue. This is obviated by folding the remaining portions of the broad and round ligament on themselves, and attaching them to the stump of the uterus.

in cases in which it is desirable to leave the ovaries, they are maintained in a better position and never become prolapsed.

Symptoms and Treatment of Atresia Vaginæ.

Dr. Augustus P. Clarke, Cambridge, Mass., said that inflammation occurring in the vaginal tract may become the exciting cause of atresia vaginæ. Adhesions of the labia or other parts in the vicinity may interfere with normal parturition, if not prevent the menstrual flow. In atresia hymenalis the obstruction usually is complete, and this gives rise to collections of blood or mucus high up in the vaginal introitus. Such a condition can be relieved only by surgical measures. The author has met with cases of atresia in which firm bands of cicatricial tissue had formed laterally between the middle and upper segments of the vaginal walls. Traumatic cases can often be cured by resort to operative measures. Congenital cases can not always be relieved satisfactorily. In those cases in which the uterus and Fallopian tubes are in a mere rudimentary condition, surgical attempts for relief for the most part prove useless. In two cases in which the cause was extensive laceration and sloughing of the parts, on account of traumatic lesions during parturition, subsequent pregnancy failed to take place. In cases in which surgical measures have been resorted to, the employment of hard vaginal dilators and iodoform gauze is of much benefit.

The author reported a case in which the vagina, at the time labor began, was so much contracted that an artificial opening, an extended incision, had to be made before the patient could be delivered. The incision was made transversely, midway between the meatus urinarius and the anus and the lower portion of the sacrum. Considerable depth of areolar tissue had to be broken down before the cervix was reached. Delivery by the feet was then accomplished. The condition was due to extensive sloughing of parts after a previous labor. Bimanual examination, so far as it can be carried out, assisted by rectal investigation will be helpful in reaching a decision as to whether or not the uterus and adnexa are absent. Their non-existence might be further strengthened by the absence of the vagina and clitoris. Accumulations of blood high up, causing consequent pressure on the bladder and rectum, accompanied with symptoms of recurrent menstrual pains, is strong evidence that surgical measures should be resorted to. In some of the cases in which atresia vaginæ supervenes after parturition, and in which extensive sloughing is also noticed, the mucous tissue is found to have undergone destructive changes at a number of different points throughout the vaginal canal. Nearly all cases of the accidental or acquired class may be relieved by operative treatment. In congenital cases radical means for relief prove useless. Such cases are due to the non-differentiation of the original kidney duct into the Wolffian and the Muellerian duct. The proper formation of the latter is absolutely essential to the development of the adnexa, the uterus and of the vagina.

Preservation of the Vault of the Vagina in Pelvic Operations.

Dr. A. Vander Veer, Albany, N. Y., said that the life of a female can be divided into three periods—through puberty; through marriage and the birth of her first child, and through the menopause. At the period of puberty we must consider the functions of the ovaries and malpositions of the uterus. At the time of the first confinement we must consider the possible lesions that might present, notwithstanding the most earnest care on the part of the obstetrician. We must also consider the possible morbific changes that come at the time of the menopause. In malignant growths the surgeon is in doubt in this region of the body as to how much normal tissue should be preserved. Dr. Vander Veer emphasized the axiom of practice to preserve normal tissues as much as possible, and under no circumstances to remove healthy organs.

Vaginal hysterectomy requires separate consideration for each individual case. In abdominal operations there is a difference in the nature of the procedure as between a malignant or non-malignant condition. Whatever method is adopted, the one important object in view should be to bring the stump well up in position so that it will hold the vault and fornix of the vagina and prevent sagging. The author has found that the old extraperitoneal method of hysterectomy preserves the vault of the vagina very well, there being less complaint of pressure of the cervix downward on the rectum, or against the tip of the coccyx. In extensive operations the surgeon should not promise too much. In considering recognized cases of malignancy, all organs within the pelvis should be removed, as these conditions frequently occur at a time in life when all functions have ceased.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-sixth Annual Meeting, held in Bedford Springs, Sept. 10-13, 1906.

(*Continued from page 1132.*)

Dr. Daniel W. Jeffaris, Chester, in the oration on medicine, discussed the passing of the general practitioner.

Some Causes of Inefficiency in Medical Practice.

Dr. John B. Roberts, Philadelphia, considered this subject under the following headings: 1, Lack of equipment for prompt service; 2, carelessness in observation; 3, indefiniteness in giving orders; 4, want of self-confidence and tact; 5, failure to appreciate the value of common remedies, and 6, insufficient doses of medicine.

The Kidney in Scarlet Fever.

Dr. B. Franklin Royer, Philadelphia, studied the kidney condition of 300 patients treated by routine doses of chloral hydrate given during the febrile period and continued for several days after all fever subsided, paralleling this analysis with a similar group of 756 patients treated with the usual remedies used in this disease. His study showed an incidence of 5.50 per cent. postfebrile nephritis where chloral was used, and 7.76 per cent. where chloral was not used. He concludes that chloral hydrate is of distinct value in the treatment of scarlet fever; that it ameliorates nervous symptoms better than any remedy yet suggested in the treatment of scarlatina; that it allays the itching of the skin; that when given during the febrile period and for some days thereafter, postfebrile nephritis appears to be less frequent.

Latent Diphtheria a Public-Health Problem.

Dr. M. Solis-Cohen, Philadelphia, said that the latent form of diphtheria in which the only symptoms are redness of the fauces, slight tonsillitis, nasal catarrh, an increased pulse frequency, an irritable heart, or a headache, is as dangerous to the public health as are the severe forms with definite membrane. He recommended the taking of cultures from all throats presenting evidence of tonsillitis or which have been in contact with true diphtheria, and that all cases in which the Klebs-Loeffler bacilli are found be placed under the control of the health authorities.

Dr. Frank F. Simpson, Pittsburg, reviewed the progress made in gynecology and referred to the new achievements therein.

Surgical Treatment of Chronic Colitis.

Dr. William M. Beach, Pittsburg, cited as proper cases for appendicostomy, cases of amebic dysentery, colon adhesions following catarrhal appendicitis, and gynecologic operations, syphilis and primary tuberculosis of the colon, although the operation should not be done until less radical measures, such as diet and local treatment, have been exhausted. He described the technic of the operation and the after treatment, particularly the irrigation, the choice of solutions to depend on the conditions present.

Perineal Prostatectomy; Its Accidents and Complications.

Dr. L. J. Hammond, Philadelphia, stated that the perineal route is the logical one, both anatomically and clinically, and cited as indications for the procedure: 1, Imposible catheterization or nearly so; 2, permanent hypertrophy of the prostate with well defined tumor; 3, residual urine in large amounts and rapidly decomposing; 4, frequent and painful micturition; 5, acute cystitis. The only contraindication is advanced pyelonephritis, associated with general arteriosclerosis. The chief accidents which are liable to occur are: Tear of the rectum, urethra or bladder wall, or hemorrhage or accidental injury to the prostatic plexus of veins, and recommended, in order to lessen the liability thereof, thorough

distension of the sphincter. The principal complications are shock, fistula (urethral, vesical, recto-urethral and recto-vesical), permanent incontinence, sepsis, uremia, pneumonia, cystic calculus.

Dr. William L. Rodman, Philadelphia, stated that in the majority of cases the perineal route is better than the suprapubic route, but in cases in which the gland is very large, or in which there is enlargement of the middle lobe, and projection into the cavity of the bladder, the suprapubic is the method of choice. In the perineal operation he prefers the method of Young, as it gives a better view of the field of operation, prevents injury to the ejaculatory ducts, and unnecessary traumatism to the urethra and neck of the bladder.

Use of Silk in Tenoplasty; an Experimental Study.

Dr. George P. Müller, Philadelphia, referred particularly to cases in which part of the tendon had been removed and replaced with a silk cord. Out of the ten dogs operated on three are still living with no perceptible limp; five were killed at from two to five weeks; both limped perceptibly, in both the silk was surrounded by fibrous tissue. In the other three new tendon tissue was forming.

Causes of Failure in Tendon Grafting.

Dr. David Silver, Pittsburg, stated that failure is due to improper selection of cases, in which the greatest possible improvement has not been obtained by other measures, and occurs in cases in which the existent deformity has not been over-corrected a sufficient length of time to allow the actual condition of the muscles to appear, and to errors in planning and executing the operation, such as inexact determination of the extent of the paralysis, improper distribution of the power, insufficient attachment of the implanted tendon, insufficient tension and improper technic leading to the formation of adhesions.

Address in Surgery.

Dr. Otto C. Gaus, Pittsburg, referred particularly to the treatment of hemorrhage occurring in the scalp, thorax and abdomen, and reviewed the literature on the subject. Hemorrhages of the scalp were considered under the designation of extradural and intradural, and those of the thorax as extrapulmonic and intrapulmonic.

Injuries of the Thoracic Cavity.

Dr. George W. Wagoner, Johnstown, divided the condition into injuries of the wall, or external injuries, which usually are not serious conditions, and injuries of the contents, or internal injuries, which are more grave. He stated that the general principles of surgical cleanliness, the removal of destroyed tissue, drainage, disinfection and rest apply particularly to this class of cases. He commented on the treatment of hemorrhage of the chest walls, of fractured ribs (in which case strips of adhesive plaster reaching halfway round the chest only should be used), surgical emphysema, dislocated cartilage, dislocation of the vertebral ends of the ribs, fractures of the sternum, shock, traumatic empyema, and injuries of the pericardium and heart.

Abscess of the Lung.

Dr. William L. Rodman, Philadelphia, stated that with the exception of the cases following influenza there is usually more than one pyogenic organism present, and that the abscesses may be either multiple or single. The diagnosis should determine as to whether there are pleural adhesions present or not, but an exploratory operation should not be done unless it is to be followed immediately by a radical one. In cases demanding a general anesthetic he prefers chloroform, which must, however, be given by an experienced operator.

Empyema in Children.

Dr. John H. Jopson, Philadelphia, reported a series of cases, the ages of the patients varying from 10 months to 13 years; 58 were males and 42 were females. Prompt diagnosis and careful after treatment are essential factors.

Treatment of Pleural Effusion.

Dr. Edward Martin, Philadelphia, stated that streptococcic empyema offers a more favorable outlook than do the latent pleural effusions, the latter being tubercular in origin, with thickening of the parietal and pulmonary pleura. Pleuritis is nearly always a secondary condition, frequently following pulmonitis or osteomyelitis. Bacteriologic and cytologic examination of the effusion are valuable to determine its character. He described in detail the operation for drainage of the cavity, which in the absence of contraindications should be made in the sixth interspace, in the midaxillary line, and if the effusion is purulent, continuous drainage is necessary.

Roentgen Treatment of Tubercular Glands.

Dr. George C. Johnston, Pittsburg, remarked on the frequency of tuberculosis following the removal of malignant growths, and urged the employment of the *x*-rays as a post-operative measure. He cited as the advantages of this treatment over the surgical procedure, freedom from pain; non-confinement to bed; no death rate; good cosmetic results and less liability of recurrence; while the disadvantages are that it is tedious, expensive and requires the services of an expert operator.

Clinical Significance of the So-called Acute Stages of Bone Tuberculosis.

Dr. H. Augustus Wilson, Philadelphia, stated that bone tuberculosis is an essentially chronic, insidious process, and that the phenomena heretofore known as the acute stage are avoidable sequelæ. The term acute stage is misleading and confusing in that it implies the beginning of a disease. In reality the so-called acute stage is intended to indicate the presence of more or less severe pain, swelling and temperature occurring during the progress of some cases of bone tuberculosis. Such exacerbations have a pathologic basis in the pressure phenomena and toxemia produced by the accumulation of broken-down detritus within the field of the osteitis. The symptoms disappear as soon as the process of advance has opened up new territory and thereby released the previously existing pressure. Recurrences take place in certain cases more or less frequently. It is erroneous to call the condition acute stage, because it is not an essential part of the disease and never occurs in the beginning.

(*To be continued.*)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(*Continued from page 1130.*)

SECTION ON OPHTHALMOLOGY.

President's Address.

Mr. R. Marcus Gunn, F.R.C.S., London, the president, in his introductory remarks, recalled the loss that Canadian ophthalmology has sustained in the death of Dr. Frank S. Buller, Montreal, whose work at Moorefields and Montreal is so well known, and who recently in collaboration with Dr. Casey Wood, of Chicago, brought to the notice of the profession the effects of poisoning by wood alcohol in a memoir already classical. He welcomed heartily the visitors, especially those from the United States.

Sympathetic Degeneration.

Mr. Freeland Fergus, Glasgow, described twelve cases of a condition which he called sympathetic degeneration. In many cases, in which one eye has been severely damaged, the other eye undergoes a degenerative process, characterized by a concentric contraction of the field of vision, in some cases extreme. In most of the eyes thus affected there is a diminution of the visual acuteness and in a few there is severe neuralgia. The condition is not accompanied by any obvious inflammation of the eye undergoing degeneration, and has never yet led to blindness. In the author's opinion, when the field of vision, under such circumstances, becomes contracted, it never recovers.

Obstruction of the Central Retinal Vein.

Dr. Frederick H. Verhoeff, Boston, reported six cases of obstruction of the central vein of the retina, from which he drew the following deductions. Complete obstruction of the central retinal vein, with the classical ophthalmoscopic picture of thrombosis of this vessel, may be produced by endophlebitis proliferans without thrombosis. The proliferation may involve the subendothelial tissue alone, or the obstruction may be com-

pleted by a more active endothelial proliferation within the lumen. All cases attributed to non-septic thrombosis are in all probability due to endophlebitis alone. The so-called canalized thrombus of the central retinal vein is in the nature of a dissecting aneurism. In certain cases obstruction of the vein may early give rise to acute glaucoma.

Wood Alcohol Amblyopia.

Dr. Casey Wood, Chicago, reported some recent cases of death and blindness from wood alcohol poisoning. He stated that intoxication from the imbibition of methyl preparations is unknown in Great Britain. It is comparatively more common in America because of the high excise duty on alcohol in the United States and Canada, by reason of which, deodorized or refined alcohol is extensively used in the arts and industries. The characteristic ocular lesion is an optic neuritis with some papillary edema and distinct engorgement of the central vessels. At the onset, this gives rise to primary blindness. The acute papillitis soon subsides and vision improves, to be followed by a post-neuritic atrophy and permanent loss of sight. The most important form of poisoning is that from inhalation of the fumes in a confined space, observed among shellacers, whose varnish is made from the deodorized wood alcohol. Within forty-eight hours the patient complains of nausea, abdominal distress, weakness, headache, blindness and dyspnea, followed in fatal cases by convulsions, coma and death. The treatment of the eye lesions is of little avail. With the adoption of denatured, untaxed grain alcohol for commercial purposes by the United States, and its probable adoption by Canada, this form of poisoning will disappear. In the meantime, more than 700 people have been killed or made blind by methylated preparations in these countries.

Dr. Edward J. Bernstein, Kalamazoo, reported a case of poisoning from inhalation of methyl alcohol in a watchman in a pharmaceutical laboratory. He said it is customary with some manufacturers to use methyl alcohol to extract the active principles from the drugs, and questioned whether there is any danger of methyl-alcohol poisoning in the use of such extractives.

Sympathetic Ophthalmia.

Dr. G. Herbert Burnham, Toronto, opened the discussion on this subject with a consideration of the treatment of the sympathetically inflamed eye, and stated his belief that the routes traveled by the impulse are the optic and ciliary nerves. The combined treatment of mercury and iodid of potassium internally and the hypodermatic injection of pilocarpin will control and practically cure sympathetic inflammation. In cases of injury of the eye, the other eye may be rendered immune by the use of this treatment, which he advises should be employed at once. From the author's experience of sixteen years with this treatment, he feels justified in advocating the procedure.

Mr. Arnold Lawson, London, considered the preventive treatment of the disease. What is most needed is authoritative information on which a surgeon may base his decision on an attempt to save a dangerously wounded eye. He suggested that great good would come from the investigation and report on the following five questions: 1. Can it be definitely stated of any wound of the globe that it will inevitably produce sympathetic ophthalmitis in the other eye? 2. If not, what are the lines on which a surgeon should decide on immediate removal of the globe? 3. What are the considerations which may make him decide to attempt to save the eye? 4. In the later history of a case, short of definite evidence of commencing sympathetic ophthalmitis, what symptoms, if any, should make the surgeon decide on enucleation of the injured eye? 5. Are there any premonitory symptoms which may be accurately described as heralding the approach of sympathetic ophthalmitis, and on which a surgeon, by immediate enucleation of the injured eye, may prevent the onset of disease?

Dr. John W. Sterling, Montreal, said that the pathology and etiology of sympathetic inflammation needed elucidation before the treatment of this disease can be anything but empirical. Only when these positions have been made absolutely plain can any clear diagnosis and scientific treatment of the conditions be hoped for, and this will probably be on the lines of serum injection. A bacillus has already been found, the inoculation of which into the vitreous and circulation of a rabbit, has set up a uveitis, resembling sympathetic ophthalmia.

Dr. Frederick H. Verhoeff, Boston, thinks that sympathetic disease, arising many years after injury, may be explained by recent infection of the scar by specific microörganisms.

Dr. Samuel Theobald, Baltimore, believes in the neuropathic origin of the disease and that a vasomotor paralysis of the sympathetic eye precedes actual inflammation, as indicated by tortuosity and distension of the central retinal veins in disease commencing in the posterior pole, and by a similar condition of the subconjunctival veins when the disease commences in the anterior structures of the eye.

Dr. John E. Weeks, New York City, spoke of the conditions of the uveal tract in cases of sympathetic ophthalmia many years after the lesion, and mentioned one case which occurred forty-five years after the injury to the exciting eye. In five such cases he had found a small-celled infiltration of the uveal tract, usually most pronounced in the ciliary body. He believed that evidence of threatened sympathetic inflammation is present, when the exciting eye, after having been quiescent for months or years, shows evidence of deep-seated inflammation however mild this may be.

Accommodation After Middle Life.

Dr. Edward Jackson, Denver, in his paper entitled "Accommodation After Middle Life and Its Practical Importance," gave statistics based on observation of 559 patients more than 50 years of age. The practical importance of this persistence of accommodation after middle life comes from the greater comfort and convenience of the patient, who is allowed to use what accommodation he has, and from the false deductions that may be made as to the presence and degree of ametropia, because of the failure to recognize the presence of such accommodation. Slight inaccuracies in the lenses of elderly patients who strain their diminishing power of accommodation to overcome them, may be more serious than higher degrees of hyperopia in young people who have plenty of accommodation.

Visual Tests for Public Services.

Dr. Charles H. Williams Jr., Boston, in his paper entitled, "Necessity for Careful Examination of Vision and Color Sense," briefly summarized the work done by railroad companies in the United States, beginning with 188 , the Australian railway in 1904 and the Canadian Pacific railway in 1906, as regards the test for color vision and perception. These roads used the Snellen or other test cards and the Holmgren worsteds and the lantern introduced by the author as an additional test for the color sense. Standard tests for visual and color sense can be safely trusted to non-professional men, instructed by and acting under the supervision of a competent ophthalmic surgeon. The examination of pilots and others at the Port of Boston under the United States Public Health and Marine-Hospital Service has followed the same methods for the last three years. The author spoke especially of the necessity of requiring similar tests before licensing drivers of automobiles, which run on the highway at a rate of speed often equaling that of an ordinary passenger train. He also referred to the recommendations of the committee on color vision of the Royal Society and of the House of Delegates of the American Medical Association in 1902 as showing the professional opinion regarding these examinations for visual and color sense.

Mr. Arnold Lawson, London, outlined the general requirements as regards tests for military service, and analyzed the present regulations in force and suggested improvements therein.

Dr. Edward Jackson, Denver, referred to the danger of relying on tests that are not reliable. There is a certain part of the spectrum that serves as a test for nearly all cases of red and green blindness, and the departure from this allows many cases to escape detection. Test letters that can be known from larger letters on the card are readily learned and the candidate will often take great pains thus to evade the test.

Mr. Freeland Fergus, Glasgow, believes that it is essential for a man who has duties as a pilot to perform to have a good light difference sense, as without this it would be impossible to make out land on a dark night.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Autumnal Catarrh.

According to the *Practitioner* this condition may be looked on as a vasomotor neurosis, as the sufferers are of a neurotic constitution and from time to time suffer from spasmodic bronchial asthma. In considering the treatment of the disease, the patient must be removed from the exciting cause of the paroxysm, and the conjunctival sacs and nostrils must be washed out with a bichlorid solution, 1 to 6,000.

In some cases, according to the *Practitioner*, tamponing the nostrils with cotton-wool soaked in glycerin is very efficient. A careful examination of the nasal passages must be made to discover any abnormal condition, if present. Some authorities recommend the following combination used locally:

℞ Mentholis ..... gr. xl | 2 | 65
Petrolati liq. ..... ʒi | 30 |

M. Sig.: Apply locally with a swab.

Sir Andrew Clark recommended the following combination to overcome the irritability of the nasal mucous membranes:

℞ Quin. hydrochloratis ..... ʒi | 4 |
Glyceriti acidi carbol ..... ʒi | 30 |

M. Sig.: Apply locally on a swab.

In cases of asthmatic attacks the following combination is recommended:

℞ Kalii iodidi ..... gr. v | 30 |
Spts. ammon. arom.
Tinct. gentianæ co., āā ..... m. xx | 1 | 20
Aquæ q. s. ad ..... fʒi | 30 |

M. Sig.: To be taken at one dose, and such a dose repeated three times a day. Or:

℞ Liquoris trinitrini (1 per cent.) ..... m. ss | 03 |
Spts. etheris nitrosi ..... m. xx | 1 | 20
Spts. chloroformi ..... m. v | 30 |
Aquæ q. s. ad ..... fʒi | 30 |

M. Sig.: To be taken at one dose, and such a dose repeated every four hours.

By inhalation the following combination is recommended:

℞ Pulv. lobeliæ
Pulv. stramonii
Pulv. theæ
Potass. nitratis, āā ..... ʒi | 4 |

M. Sig.: A small amount to be ignited and the fumes inhaled.

The general tone of the patient's nervous system must be improved with such preparations as arsenic, iron, phosphorus and strychnin. For this, the following combination is of value:

℞ Kalii bromidi ..... gr. xv | 1 |
Liq. arsenicalis ..... m. iii | 20 |
Tinct. gentianæ co ..... m. xxx | 2 |
Aquæ q. s. ad ..... fʒi | 30 |

M. Sig.: To be taken at one dose, and such a dose repeated after each meal, well diluted in water.

Angina Pectoris.

In the same periodical Hugh Barber, in writing on the subject of angina pectoris, states that in this disease there is atheromatous degeneration of the coronary arteries, producing narrowing of their orifices. The heart may show myocardial changes. The pain is due, according to Hughes, to the involvement of the cardiac plexus and radiates to adjacent nerves.

The treatment recommended is as follows:

RELIEF OF THE ATTACK.

In a severe attack of angina pectoris inhalation of amyl nitrite is recommended at once by breaking a capsule containing three minims of this preparation and instructing the patient to inhale it. If good results do not follow this treatment within a minute or two, he recommends that chloroform be tried, applied on a sponge in a smelling bottle and inhaled, the patient holding the bottle himself. If the pain is severe and persistent, a hypodermic injection of morphin is recommended, given in ¼-grain doses (.015). If the patient is feeble he counteracts the effects of the morphin by administering strychnin, grain 1/40 to 1/30 (.0015-.002). At the same time the following combination may be taken by the mouth as a heart stimulant:

℞ Spts. etheris
Spts. ammon. arom., āā ..... m. xxx | 2 |
Aquæ camphoræ q. s. ad ..... fʒi | 30 |

M. Sig.: To be taken at one dose, well diluted.

As an alterative for amyl nitrite, he recommends one or two minims (.06-.12) of the liquor trinitrini (B.P.), which is equal to 1 per cent. solution of nitroglycerin. As he states that this latter preparation will give relief in some cases in which amyl nitrite fails, sodium nitrite in doses of from 2½ to 5 grains (.15-.30) is advised for the pain when it is not readily relieved by the amyl nitrite. Vapors such as iodid of ethyl or bromid of ethyl may be tried in stubborn and intractable cases.

In mild cases, or those in which the pain persists after the attack is much relieved, hot applications should be applied to the precordium. After the attack has passed the patient should be instructed to rest, avoiding all excitement and restricting himself to a light diet and avoiding alcoholic stimulants.

If such attacks recur Barber recommends that a course of nitrites be given similar to the following:

℞ Liq. trinitrini ..... m. i | 06 |
Tinct. card. co ..... m. xxx | 2 |
Spts. chloroformi ..... m. x | 65 |
Aquæ q. s. ad ..... fʒi | 30 |

M. Sig.: One such dose, to be taken three times a day.

This dose should be gradually increased every fifth or sixth day until headache occurs and flushing is present. The nitrates may be kept up for several weeks.

The most difficult cases, according to the author, are those in which there is a tendency for the heart to become incompetent, as the liquor trinitrin (nitroglycerin) may increase such a tendency, while digitalis would cause the pain to return. Such patients must be kept in bed or instructed to lie down while the nitroglycerin is being given, and instead of giving digitalis he recommends caffein and nux vomica, combined as follows:

℞ Liq. trinitrini ..... m. i | 06 |
Caffeinæ citratis ..... gr. v | 30 |
Tinct. nucis vomicæ ..... m. viii | 80 |
Syr. aurantii ..... fʒss | 2 |
Aquæ q. s. ad ..... fʒi | 30 |

M. Sig.: One such dose three times a day.

TO AVOID ATTACKS.

A patient who is subject to attacks of angina pectoris should regulate his life in such a way that he may avoid all forms of excitement. Physical exertion, over-filling of the stomach and emotion should be avoided as the most important factors in bringing on an attack. Other causes, such as mental excitement, business worry, anger, exposure to cold, the ingestion of tea, tobacco, coffee and alcohol, are all exciting factors which may bring on an attack and should be avoided. The clothing should be warm in winter. The diet should consist of boiled fish, eggs lightly boiled and milk puddings. The patient should be instructed to drink plenty of water. Vegetables and such other foods as are liable to cause flatulence should be avoided. Regularity in eating should be instituted and supper omitted.

The bowels must move daily and regularly. If necessary, a pill containing aloes and nux vomica, with an occasional dose of calomel, may be given.

As a tonic to the digestive tract the following combination is recommended:

℞ Sodii bicarb ..... gr. xx | 1 | 20 |
Tinct. aurantii ..... m. xx | 1 | 20 |
Infus. calumbæ ..... fʒss | 15 |
Aquæ chloroformi q. s. ad ..... fʒi | 30 |

M. Sig.: At one dose. Or:

℞ Acidi nitro-hydrochlor. dil. ..... m. x | 65 |
Tinct. nucis vomicæ ..... m. viii | 50 |
Tinct. aurantii ..... m. xx | 1 | 20 |
Aquæ q. s. ad ..... fʒi | 30 |

M. Sig.: To be taken at one dose, and such a dose repeated after each meal, in water.

He also recommends potassium iodid in doses ranging from grains 10 to 20 (.65-1.20) three times a day, well diluted in water. Arsenic and strychnin when combined are serviceable in this disease, given as follows:

℞. Liq. strych. hydrochlor.
Liq. potass. arsenitis, āā.....m. iii | 20
Tinct. aurantii.....m. xx | 1 20
Aquæ q. s. ad.....f℥i | 30

M. Sig.: One such dose three times a day.

In neurotic individuals potassium bromid is of value, given with the foregoing combination.

When anemia is present, with a valvular lesion of the heart, digitalis and iron may be combined, remembering, as he states, that the former may cause the pain to return:

℞. Tinct. digitalis.....m. x | 65
Liq. ferri perchlor.....m. xv | 1
Acidi citrici.....gr. v | 30
Syrupi limonis.....f℥ss | 2
Aquæ q. s. ad.....f℥i | 30

M. Sig.: To be taken at one dose.

Rhus Poisoning.

The following combination is recommended by Loving, in the *New York Med. Jour.*, for the treatment of rhus poisoning:

℞. Chloralis hydratis.....℥ii | 8
Sodii hyposulphitis.....℥i | 30
Aquæ dest.....Oi | 500

M. Sig.: Keep the inflamed parts covered with a cloth constantly saturated with the solution.

In case the foregoing combination fails to produce the proper results, Loving recommends that the official black wash be applied locally.

Pruritus Ani.

In the treatment of pruritus ani, Hirschman, in the *Physician and Surgeon*, recommends that a saturated solution of boric acid be employed as a local wash, as it is not only a cleansing agent, but produces a cure in some cases. An ointment prepared as follows may then be applied:

℞. Hydrarg. chloridi mitis.....℥ss | 2
Adipis q. s. ad.....℥ss | 15

M. Ft. unguentum. Sig.: Apply locally.

He emphasizes the importance of calcium chlorid given internally in the following combination:

℞. Calcii chloridi.....℥ii | 8
Tinct. aurantii flores.....f℥vi | 24
Aquæ chloroformi q. s. ad.....f℥vi | 180

M. Sig.: One or two tablespoonfuls three times a day, one hour before meals.

If any disturbance of the stomach should arise the dose may be reduced.

Sodium thiosulphate is in some cases of value, applied as follows:

℞. Sodii thiosulphatis.....℥iii | 12
Aquæ dest.....f℥vi | 180

M. Sig.: Apply locally after thoroughly cleansing the parts.

Ringer recommends the following:

℞. Acidi salicylici.....℥ii | 8
Olei myristicæ.....f℥iss | 6
Cetacei.....℥iii | 12
Olei theobrom.....℥v | 20

M. Sig.: Apply locally night and morning.

Acute Articular Rheumatism.

The following outline of treatment is recommended by Shoemaker in the *Med. Bulletin*, in the treatment of acute articular rheumatism: Salicylic acid combined with soda is the most preferable combination, and if the pain is severe, codein may be given in conjunction with them as follows:

℞. Sodii salicylatis.....℥ss | 15
Codeinæ sulphatis.....gr. vi | 36
Glycerini.....f.℥i | 30
Tincturæ cardamomi co.....f.℥i | 30
Aquæ q. s. ad.....f.℥vi | 180

M. Sig.: Two teaspoonfuls in water every three hours.

If the codein is omitted from the foregoing combination, the dose may be repeated once every hour for five or six doses.

In addition to the foregoing internal treatment, the application of lead water and laudanum to the parts involved is often of value in relieving the extreme pain if accompanied by inflammation and swelling.

After the temperature has returned to normal it is recommended that some alkali, such as sodium bicarbonate or the iodid, may be added to the salicylate; later the salicylate may be discontinued and the alkali alone kept up until complete convalescence. The diet must be regulated to suit the individual and his digestive capabilities. So long as there is fever it is better to confine the patient to a liquid diet consisting chiefly of milk, and the patient should be encouraged to drink as much water as possible. In case constipation is present, the following pill is recommended as necessary to correct this condition:

℞. Massæ hydrarg.....
Ext. colocynth. co.....
Pulv. jalap co., āā.....gr. xx | 1 30
Olei menth. pip.....mi | 06

M. Ft. pillulæ No. xx. Sig.: One pill, as necessary, to relieve the constipation.

Some authorities recommend the following combination as a pleasant one in the treatment of acute rheumatism:

℞. Sodii salicylatis.....℥iii | 12
Syrupi zingiberis.....℥i | 30
Aquæ q. s. ad.....℥vi | 180

Fiat mistura. Sig.: One tablespoonful every three hours.

The following combination of ammonium and sodium salicylate is said to be a very efficient combination and is devoid of unpleasant symptoms:

℞. Sodii bicarb.
Ammonii carb., āā.....gr. v | 30
Acidi salicylici.....gr. xx | 1 30
Aquæ q. s. ad.....℥i | 30

M. Sig.: To be given at one dose and repeated every two hours for three doses and then once in four hours.

Those who have a preference for salicin may find the following combination of service:

℞. Salicini
Potass. bicarb.
Sodii bicarb., āā.....gr. xii | 75

M. Ft. chart. No. i. Sig.: One such powder dissolved in half a glass of water every three hours.

Locally to the joints the following liniment is of service in rendering the pain more endurable and in lessening the swelling:

℞. Acidi salicylici.....gr. cxx | 8
Alcoholis.....f.℥i | 30
Olei ricini.....f.℥iss | 45

M. Fiat linimentum.
Sig.: Apply locally to the affected joints.

Medicolegal

Neither County Nor Members of Board of Health Liable for Quarantine Through Mistake or for Loss of Crops.

The Supreme Court of Iowa says, in the case of Beeks vs. Dickinson County and others, an action for damages, where a farmer and his family were quarantined by the local board of health of the township on the mistaken supposition that there was a case of smallpox in the family, that it is the settled law of Iowa, as well as the general rule, that municipal corporations are not liable for the negligence of their officers or agents in executing health regulations adopted for the purpose of preventing the spread of contagious diseases. In so far as a municipality undertakes the duty of making and enforcing quarantine regulations and other laws for the promotion of the public health, it is performing governmental functions, and its officers are not agents for whose action or inaction it is liable unless such liability is imposed by its charter, or by the laws of the state under which it exists. Furthermore, it was probably true that the officers in question were not strictly municipal officers or agents so as to render the county liable for their acts in any event. They became health officers by virtue of the statute which fixed the tenure of office also. While such officers are elected in townships, they are elected in obedience to the statute, to perform a public service not peculiarly local or corporate, but as state officers with such powers and duties as the statute confers on them.

The plaintiff, in addition to claiming that the county was liable generally for the alleged negligence of the local board of health, contended that the local officers had promised that the county would provide him with the necessary help for tak-

ing care of his crops, as well as that, because the statute made the county liable in the first instance for the care of infected and quarantined persons, it was liable for the value of his crops which had been lost. The court replies that section 2568 of the Iowa Code creates local boards of health, and makes it the duty of such boards to make such regulations as are necessary for the protection of the public health, and to proclaim and establish quarantine against all infections or contagious diseases dangerous to the public, and section 2570 provides for the care of infected persons and for the payment of the expenses incurred on account thereof. The statute neither expressly nor by implication provides for anything more, and the court is not at liberty to read into it an enlarged liability. It is also very clear that the members of the local board of health had no power to create a liability not imposed by law, even if they had acted under the direction of the board of supervisors. The liability that may be incurred by such boards is fixed by law and beyond this neither can go.

Taking up the question of whether the members of the local board of health were individually liable for the loss of the plaintiff's crops, the court says that the statute makes it the duty of health officers to quarantine against "all infectious or contagious diseases dangerous to the public," and it can not well be questioned that the defendants were acting within the scope of their duty as such officers, and that in establishing the quarantine they were acting in a quasi (as it were) judicial character. They were vested with the power to determine whether an infectious or contagious disease existed in the plaintiff's family, and if found to exist, their duty under the statute required them to take the proper steps to prevent its spread, and had they neglected to do so they would have been culpable in a high degree. They were, therefore, acting judicially, and it is the general rule that officers so acting are not liable for injuries which may result from such acts performed in the honest exercise of their judgment, however erroneous or mistaken the action may be, provided there be no malice or wrong motive present.

In some cases an exception to this general rule has been recognized, and the individual officers have been held liable because of the maxim that where there is a wrong there is a remedy. This court is of the opinion, however, that where the public health is involved this rule should not be applied, notwithstanding the fact that courts of great ability have so held. It is the modern tendency of judicial opinion to hold that the public health is the highest law of the land and "whenever a police regulation is reasonably demonstrated to be a promoter of public health all constitutionally guaranteed rights must give way to be sacrificed without compensation to the owner."

Nor does this doctrine necessarily conflict with the maxim referred to. As already stated, this board of health was a creation of the statute and its paramount duty was to protect the public health; its duty, then, was to the public and not to any individual member thereof, except to act honestly and without design to injure him. If a health officer fails to do his duty no individual may complain, for the duty is public and the officer is not charged with any individual duty to any particular person. If there be no liability for an omission of public duty, it would seem to follow without question that an erroneous performance should not subject the officer to personal liability. It may, it is true, cause an injury to the individual, but it is not a wrong because the officers owe the individual no duty beyond that already stated. This rule should not be so extended as to protect health officers who act without the scope of their authority, or who act with gross negligence amounting to malice.

It is unfortunate that any individual should suffer loss because of a mistake as to the existence of a dangerous contagious disease, and yet the welfare of the public is of such paramount importance that a rule should not be established which will have the necessary effect of increasing the public danger. If health officers, acting in perfect good faith and as their judgment dictates, are held liable for a mistake in judgment, the effect on the public health can not be doubted. For instance, many competent physicians have never been brought into actual contact with smallpox, and many mistakes have been made in diagnosing diseases which later prove to be highly contagious. Whole communities have been exposed and suffered because of mistakes in judgment and overzeal on for the liberty of the individual. If a civil liability is to be imposed because of a quarantine which is later proved unnecessary, the danger to the public will be greatly enhanced, and the effectiveness of the statute greatly impaired. This court does not feel like announcing such a rule, nor does it believe justice to the individual requires it.

Liability for Negligence of Nurse in Sanitarium.

The Supreme Court of Louisiana says, in the case of Stanley vs. Schumpert and others, that a physician suggested to the plaintiff (his patient) that during the treatment of his eyes he should stay at a certain sanitarium. The physician prescribed a mild solution to be applied under the direction of a trained nurse. But one day one of the nurses in the institution, who happened to be in charge of this patient's ward, undertook to administer the solution. Instead, however, of administering the mild solution prescribed, through negligence she put the dropper into alcohol and dropped alcohol freely into the patient's eye. The injury, if any, was very slight, although the alcohol caused intense pain.

An action for damages was brought. Two of the defendants, the court says, were not the owners of nor connected with the management of the sanitarium at the date of the accident. Suit against them did not lie. They were not liable. But the third defendant, at the time the lessee of the sanitarium, who was alone responsible for its management, the court holds was liable for nominal damages, fixed in this case at $25, for the suffering, though momentary, which the negligent mistake occasioned.

An attendant in a sanitarium, the court holds, should be careful, and it is the duty of those in charge to compel the nurse to be careful, and not to neglect the patient who is under the care of the sanitarium, and to whom it must see, to some extent at least, that medicines are properly administered. Again, the court says that a nurse should exert her best endeavors to avoid mistakes of any kind, as they are sometimes attended in the sick room with the saddest consequences. The proprietor of a drug store has been held liable for the mistake of his clerk. The general responsibility of a druggist and of his clerk is greater than are the duties of the nurse. Nonetheless, the functions of the nurse are sufficiently important to render her and her employers liable in damages for inflicting pain negligently. This nurse was employed by the sanitarium and had charge of the plaintiff's case in accordance with his contract of employment. She was acting for the sanitarium under the direction of the plaintiff's physician. Her duty was to carry out the orders of this physician, and it was the duty of the sanitarium to see that she carried out the orders devolving on her as a nurse. The physician could have had another nurse called in her place, but he had no right to discharge her. The management of the sanitarium had the right of control and of discharge.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

September 29.

1 *New Foundation of the Medical School. J. C. Warren, Boston.
2 *The Faculty of Medicine. W. L. Richardson, Boston.
3 *The Laboratories. T. Dwight, Boston.
4 *The Clinics. F. C. Shattuck, Boston.
5 *Acceptance of the Buildings. C. W. Eliot, Boston.
6 *Diseases of the Bile Passages, Including the Liver, Gall Bladder and Pancreas. M. H. Richardson, Boston.
7 Diseases of the Biliary Passages, Including the Liver, the Gall Bladder and the Pancreas. R. G. Cutler, Boston.
8 *An Experimental Study on the Bactericidal Power of Various Silver Preparations. G. S. Derby, Boston.
9 Case of Pyloric Spasm in an Infant. J. L. Morse, Boston.

1, 2, 3, 4, 5.—See abstracts in THE JOURNAL, Oct. 6, 1906 pages 1113, 1114 and 1115.

6. Diseases of Bile Passages.—The rule by which Richard-

son has been guided and which he has rarely, if ever, had occasion to regret, is that when symptoms exist in the right upper quadrant which are of a chronic character, when the attacks of pain or distress continue especially at irregular intervals, and when the attacks of pain in any form suggest the presence of gallstones, exploration is indicated, particularly when palliative measures have been employed in vain for a reasonable length of time. When later signs confirm the existence of gallstones, any measures other than surgical are unreasonable and ineffectual.

8. **Bactericidal Power of Silver Preparations.**—Derby compared the bactericidal power of nitrate of silver and some of the newer silver preparations for which so much has been claimed by their manufacturer. The preparations tested were purchased in original bottles from reputable wholesale firms. The *Staphylococcus aureus* was utilized for the work. The following silver preparations were tested: nitrate of silver, argyrol, protargol, collargol, largin, ichthargan, albargin, argonin and argentamin. Solutions of nitrate of silver varying in strength from 0.5 per cent. to 2 per cent. killed the *Staphylococcus aureus* in from two to five minutes. An exposure of 30 seconds to the 0.5 per cent. solution was generally sufficient to prevent a growth in 24 hours, but not sufficient to kill all the cocci. The bactericidal action of protargol is efficient, though not so efficient as that of nitrate of silver. The microörganism is usually killed by a 2 per cent. or a 4 per cent. solution at the end of from three to five minutes, though occasionally a few colonies will grow after ten minutes' exposure. An exposure of one minute will usually prevent a growth of the germ in 24 hours. Solutions of the same strength will kill the pneumococcus in one minute. The bactericidal power of collargol is comparatively weak, as a growth of the *Staphylococcus aureus* could be obtained at the end of 20 minutes, using the 4 per cent. solution. With a 1 per cent. solution a growth was obtained at the end of one hour. Albargin in 10 per cent. and 20 per cent. solutions killed the *Staphylococcus aureus* in from two to five minutes. The 1 per cent. solution gave a growth after 15 minutes' exposure. In ichthargan solutions varying in strength from 1/10 per cent. to 1 per cent., there was no growth after from one to four minutes. With argentamin, ethylenediamine-silver nitrate, practically the same results were obtained with a 5 per cent. solution of this drug as with ichthargan. Largin, silver protalbin, is an efficient bactericide. The *Staphylococcus aureus* was killed by a 10 per cent. solution in from two to five minutes. With argonin, argentum casein, no growth could be demonstrated after from three to six minutes. The bactericidal power of argyrol is exceedingly weak. In a large series of observations a growth of the *Staphylococcus aureus* was obtained after exposure to the 10 per cent., 25 per cent. and 50 per cent. solutions for one hour, one hour and two hours respectively. A diminution in the number of colonies commonly appeared at the end of 20 minutes. Its action was uncertain, and while occasionally the germs were affected by a 20-minute exposure, more often the cultures taken at the end of one hour showed a growth when examined 24 hours later. The age of the solution did not appear to be of importance.

New York Medical Journal.
September 29.

10 *Case of Myoclonus Epilepsy, with Autopsy. C. W. Burr, Philadelphia.
11 Observations in the Tropics. L. L. Seaman, New York.
12 *Gunshot Wounds of the Spinal Cord. I. S. Haynes, New York.
13 *Drugs in Diabetic Glycosuria. A. C. Croftan, Chicago.
14 *Posterior Gastroenterostomy; Extreme Gastroptosis, Motor Insufficiency, Epilepsy; Apparent Cure. J. Burke, Buffalo.
15 Pathologic Physiology. B. Robinson, Chicago.
16 Etiology of Uterine Fibroids. D. H. Griffith, Dunbar, Pa.
17 *Case of Westphal's Pseudosclerosis. F. T. Simpson, Hartford, Conn.

10. **Myoclonus Epilepsy.**—The patient whose history is reported by Burr died of acute pulmonary tuberculosis after he had been under the author's care for ten years. The most marked lesions found at the necropsy were smallness of the right cerebellar hemisphere, decrease in the number of cells of Purkinje in both lobes and thickening of the arachnoid with obliteration of the right posterior lacerated foramen. Burr thinks that these changes were caused by disease during intrauterine life or soon after birth, and that the cerebellar changes instead of being the sole cause of the patient's condition were simply a part of the general process resulting in the production of a poorly developed brain.

12. **Gunshot Wounds of Spinal Cord.**—Haynes presents the statistics of 46 cases collected by him from the literature covering the period from 1896 to 1906. His paper also contains the statistics of Prewett's 42 cases collected from the literature of 1879 to 1896. Haynes makes a plea for early myelorrhaphy and reports a case of bullet wound through the liver, spinal column and cord in which laminectomy was performed successfully and the patient recovered.

13. **Drugs in Diabetic Glycosuria.**—Croftan claims that none of the remedies recommended for the cure of diabetes can exercise a curative effect on the disease proper, and that only a few appreciably influence the excretion of sugar. In vaunting the efficacy of any drug in diabetes the element of suggestion should always be considered, particularly when a new drug of much heralded efficacy is tried for the first time. Among the drugs discussed by Croftan are opium and its alkaloids, nerve sedatives, preparations of salicylic acid, jambul, alkalies, potassium iodid, and intestinal antiseptics.

14. **Epilepsy and Gastroenterostomy.**—Burke reports a case of epilepsy occurring in a woman of 33. There existed a total gastroptosis, the greater curvature rested on the pubes, the lesser at the umbilicus. There were marked muscular insufficiency and ectasy with the consequent deficient drainage. Medicinal and mechanical treatment were used to the limit of patience and endeavor without improvement, and a posterior gastroenterostomy was made to improve gastric drainage. This, he says, was a case in which the result justified the attempt, and the operation apparently cured a case of genuine epilepsy.

17. **Westphal's Pseudosclerosis.**—Simpson reports a case of this kind occurring in a girl 21 years old, whose mother and father were cousins. One uncle and one aunt have been insane. Her father died at 50 of heart disease; her mother is well. Two younger sisters are reported as well. The disease began five or six years ago, and all the symptoms have been typical. The features of Westphal's pseudosclerosis present in this case are: 1. Psychoses in the antecedents. 2. In the initial period slight mental deterioration, apathy, followed by irritability and resulting in dementia. 3. Remission in the course of the disease, progressive course. 4. Vertigo and headaches. 5. Disturbance of speech, slow, becoming incomprehensible. 6. Slowness of muscular movements. 7. Spastic paresis, transitory, then lasting. 8. Increased tendon reflex. 9. Tremor and ataxia of upper extremities. 10. General weakness, walking uncertain. 11. Hypesthesia.

Medical Record, New York.
September 29.

18 *Percussion of the Skull as a Means of Placing the Indication for the Performance of Lumbar Puncture. H. Koplik, New York.
19 *Problem of Localization in Relation to Head Injuries. W. W. Graves, St. Louis.
20 *Surgical Treatment of Trigeminal Neuralgia. L. V. Moscowitz, New York.
21 *One Hundred and Three Cases of Epilepsy. W. L. Stowell, New York.
22 *A Plea for a More Thorough Course in Practical Pharmacy in Our Medical Schools. M. C. Thrush, Philadelphia.
23 *Some Points on the Diagnosis and Treatment of the Protuberculous State. C. F. Dixon, Minneapolis.
24 *Examination of the Feces of Twenty-Five Starch-fed Infants, with a Few Clinical Observations. J. H. Lopez, Philadelphia.
25 Suppurating Omental Hernia. F. R. McCreery, New York.

18. **Percussion of Skull as Indicator for Lumbar Puncture.**—Koplik states that percussion of the skull affords a means of detecting acute hydrocephalus, whether caused by acute distension of the ventricles on the first day of a cerebrospinal meningitis, or during the slow, insidious onset of a tuberculous meningitis. When the lateral ventricles are distended with serous fluid the percussion note at a given spot varies according to the position of the head. While the person sits with head upright, the most resonant note is brought out by percussion of the skull by means of the finger toward the basal level of the frontal bone, and the squamous part of the parietal

bone. On the lower bone, as the head is inclined to one side, percussion gives a tympanitic note. In cases of acute distension of the ventricles lumbar puncture is a life-saving operation. Koplik considers percussion of the skull the only definite means of determining whether there is an increase of fluid in the ventricles or the subarachnoid space causing pressure effects, and therefore demanding immediate relief. He cites a number of cases in point.

19. **Localization in Relation to Head Injuries.**—Graves declares that a satisfactory solution of the problem of localization in traumatic lesions of the brain depends on a consideration of all symptoms and their order of development; the degree of consciousness manifested by the patient and his reactions to stimuli; a degree of involvement of areas of the brain of known function sufficient to cause focal symptoms; the carefulness and thoroughness with which the examination is made.

20. **Surgical Treatment of Trigeminal Neuralgia.**—Moschcowitz says if the supraorbital, infraorbital, mental, malar, or inferior dental branches, either singly or collectively, are involved, the nerve should be divided and the foramen plugged by a gold or silver wire or button. If the superior or inferior maxillary nerve is involved, Abbe's operation is indicated. A celluloid or gold button should be substituted for the rubber tissue. He believes that by following these suggestions the extirpation of the Gasserian ganglion will be rendered unnecessary.

21. **One Hundred and Three Cases of Epilepsy.**—Stowell gives the summary of his notes on 103 cases of epilepsy.

22. **Practical Pharmacy in Medical Schools.**—Thrush reviews the curricula of various medical schools and points out the deficiency in the instruction in practical pharmacy. He declares that on examination 1.3 per cent. of the prescriptions written by recent graduates were found to contain dangerous combinations that would have resulted seriously if they had been given as ordered. Thrush urges that every medical student should be thoroughly trained in practical prescription writing and dispensing.

23. **The Pretuberculous State.**—Disen classifies patients in two groups, the acid and the alkaline. He believes that the alkaline type is far less immune to tuberculosis than the acid one. He tests both urine and blood to determine the type with which he is dealing. He describes his methods in detail.

24. **Starch-fed Infants.**—Lopez tested the digestion of 25 starch-fed infants and is convinced from his work that they do healthfully digest starch.

The Journal of Infectious Diseases, Chicago.
September 29.

26 *Specialism in Its Modern Significance. A. B. Hale, Chicago.
26.—See abstract in THE JOURNAL, Oct. 24, 1903, page 1041.

The Journal of Infectious Diseases, Chicago.
June 29.

27 Statistical Study of Generic Characters in the Coccaceæ. C. E. A. Winslow and A. F. Rogers.
28 Toxic Effect of Certain Acids on Typhoid and Colon Bacilli in Relation to the Degree of Their Dissociation. C. E. A. Winslow and E. R. Lochridge.
29 *A Contribution to the General Principles of the Pharmacodynamics of Salts and Drugs. A. P. Mathews, Chicago.
30 *Studies on Simple and Differential Methods of Staining Encapsulated Pneumococci in Smear and Section. A. Wadsworth, New York.
31 *Liver Necrosis and Venous Thrombosis in Horses Actively Immunized with Diphtheria and Tetanus Toxins and with Streptococci and Their Products. H. D. Pease and R. M. Pearce, Albany, N. Y.
32 A Fundamental Error in Current Attempts to Apply Physical Chemistry to Serum Pathology. W. H. Manwaring, Bloomington, Ind.
33 Third Serum Component. W. H. Manwaring, Bloomington, Ind.
34 *Cause of Green Coloration of Bacterial Colonies in Blood-agar Plates. G. P. Ruediger, Chicago.
35 *Generalized Blastomycosis. E. E. Irons, Chicago, and R. A. Graham.
36 *Rôle of Phagocytosis in the Pneumococcidal Action of Pneumonic Blood. E. C. Rosenow, Chicago.

29. **Pharmacodynamics of Salts and Drugs.**—Mathews concludes that the action of salts on the protoplasmic system is due chiefly to the actions of the ions of the salt. The particular result obtained is caused, in part at least, by the substitution of the ions in the protoplasmic system by the ions of the salt solution used. The power of different ions to upset the ordinary state of the protoplasmic system depends on the difference between the potential energy content of the ion which is replaced, and that which is reintroduced. This difference in the potential energy content is determined by the difference in the intensity factor of the potential energy of the ions—i. e., by difference in the ionic potentials. It is shown that a good numerical relation exists between the available potential energy of any salt and its minimum fatal dose, so that for simple systems the minimum fatal dose can be very closely calculated from the available potential energy of the salt, if certain constants are known. The character of the action of any given salt solution on protoplasm must of necessity depend on the character of the ions, metal and metalloid, already in combination with the protoplasm. This results as a necessary consequence of the theory, and it explains the fact that toward different cells, and toward the same cell after exposure to different salt solutions, the same salt solution may exert a different action, being at times stimulating, at other times depressing. Mathews thinks that the action of organic drugs will be found to depend, in part at least, on the available potential energy of the dissociated particles of the drug.

30. **Staining Encapsulated Pneumococci.**—Wadsworth finds fixation with 4 per cent. formalin most satisfactory for smears. This may be followed by gentian-violet, or the Gram differentiation method may be employed. To demonstrate encapsulated pneumococci in smears of sputum, albumin in the form of blood serum (Hiss) or egg albumin (Bosi) must be added and thoroughly mixed before making smears. In staining sections of tissue it was found necessary, in order to secure sufficient penetration, to inject the tissue with the hardening fluid (formalin) or to cut the material into small bits or thin slices. The Gram method of staining the sections was found the most useful on account of the virtue of its differentiation.

31. **Liver Necrosis and Venous Thrombosis.**—Pease and Pearce found in a series of 12 horses, actively immunized with the products of certain pathogenic microörganisms, widespread liver necrosis in 9 and localized liver necrosis in one. Thrombosis of the portal vein was present in 3, of the splenic vein in 2, and of the branches of the pulmonary artery in one, of the 9 horses showing widespread necrosis. One horse had thrombosis of the branches of the portal veins and another of the pulmonary artery without the liver necrosis. The evidence leads them to conclude that the toxic bacterial products injected are directly and indirectly responsible for the production of the liver necrosis and not such materials as peptones, beef extractives and antiseptics. They could not determine what factors were responsible for the venous thrombosis.

34. **Green Coloration of Bacterial Colonies.**—Ruediger has found that the green coloration of bacterial colonies in blood-agar plates is dependent on the production of an acid and the action of this acid (probably lactic acid) on the red corpuscles.

35. **Generalized Blastomycosis.**—Irons and Graham report the following case of systemic blastomycosis: A lumberman, aged 47, noticed in March, 1905, a nodule on the right thigh which "broke" and healed slowly with ulceration. Soon other similar lesions appeared on the forehead and extremities. Weakness, slight fever and swelling of the ankles set in. When first seen (September, 1905), numerous healed and partially healed superficial lesions, resembling blastomycetic dermatitis, as well as subcutaneous abscesses were present. Soon cough set in with dulness and râles over the lungs and the appearance of blastomycetes but no tubercle bacilli in mucopurulent, occasionally blood-stained sputum. New external lesions with sloughing, extensive dissection, and even denudation of bone, appeared, with increasing anemia, leucocytosis, fever and death, January, 1906. The autopsy showed multiple subcutaneous abscesses and sinuses involving the face, scalp and extremities; erosion of the left parietal bone; deep sloughing ulcer of the right thigh, numerous superficial ulcers and scars; miliary blastomycosis of the lungs and spleen; ulcerative blastomycotic bronchopneumonia; retro-esophageal abscess with erosion of the vertebræ; abscess of the thyroid cartilage; fibrous pleuritus; atrophy of the liver

and heart, and enlargement of the spleen and mesenteric lymph nodes. Microscopically the nodules showed necrotic centers surrounded by a zone of giant cells and new tissue cells. The giant cells all contained organisms which also occurred free. Occasionally a bronchiole was found in the center of an area; blastomycetes were present in a large blood vessel in the lung near a focus; blastomycetes were present in the retro-esophageal abscess and in the cellular foci in the spleen—no giant cells were seen here. No amyloid cultures of blood during life were sterile; cultures from sputum and pus gave blastomycetes. Streptococci were isolated after death from the cerebrospinal fluid, liver, spleen and kidney; the *Staphylococcus pyogenes aureus* was isolated from the liver, spleen and retro-esophageal and knee abscesses. Blastomycetes (present in lesions) after death were isolated only from the kidney. They were virulent for guinea-pigs and rabbits, causing local abscess and general miliary blastomycosis.

36. Phagocytosis in Pneumococcidal Action of Pneumonic Blood.—Rosenow has studied thoroughly phagocytosis of pneumococci *in vitro* under various conditions. Non-virulent strains of pneumococci are readily taken up by human leucocytes in the presence of normal serum and the phagocytosis is roughly proportional to the amount of serum present. Washed leucocytes do not take up the organisms. Virulent strains are not taken up by the leucocytes under any conditions, but as they lose their virulence by cultivation they become susceptible to phagocytosis. As a rule, pneumococci isolated from the blood of patients before, during or after crisis are not taken up *in vitro* by the patient's blood or by any other blood. The opsonin for pneumococci is nearly destroyed by heating to 60 C. for one and one-half hours. Rosenow's experiments seem to show that in some cases during and shortly after crisis there is a slight increase in the opsonic content of the patient's blood and that in fatal cases it may fall below normal. The pneumonic leucocytes are more actively phagocytic than normal leucocytes and also more resistant to heat. He concludes that the pneumococcidal action of pneumonic or other bloods is due to the combined action of the serum and the living leucocytes through phagocytosis and subsequent intracellular digestion. The serum of normal or pneumonic individuals has no bactericidal effect whatever on pneumococci. In view of such facts as the failure of pneumococci isolated from the blood to be taken up by leucocytes the phenomenon of crisis and healing in pneumonia can not be attributed solely to phagocytosis.

Surgery, Gynecology and Obstetrics, Chicago.
September.

37 *Atonia Gastrica in Relation to Cholelithiasis. A. Rose, New York.
38 Artificial Dilatation of the Cervix. L. Knapp, Chicago.
39 Cesarean Section Necessitated by Obstruction of Pelvis by Non-Pregnant Half of Bi-Cornate Uterus. G. S. Brown, Birmingham, Ala.
40 *Some Mooted Questions Pertaining to Prostatectomy. C. G. Cumston, Boston.
41 *Operation of Choice in Chronic Obstruction of the Intestine Due to Malignant Stricture. J. De Y. Ringler, Pittsburg.
42 *Enormous Elephantiasis of Both Legs Surgically Treated. P. F. Rogers, Milwaukee.
43 *Case of a Lithopedion. S. C. Beede, David City, Neb.
44 The Contest with Cancer of the Uterus. Professor Dührssen, Berlin.
45 Study of the Development of Extrauterine Decidua. W. H. Lamborn, Chicago.
46 Malignant Disease of the Bowel—Chronic Interstitial Obstruction. G. P. LaRoque, Richmond.
47 *Treatment of Placenta Praevia Centralis by Cesarean Section. A. P. Condon, Omaha, Neb.
48 *Induction of Premature Labor and Accouchement Forcé in the First Five Thousand Labors in the Obstetrical Department of Johns Hopkins University. J. W. Williams, Baltimore.
49 Infection of Ovarian Cystomata. H. C. Coe, New York.
50 *Ovarian Cysts Situated Above the Superior Pelvic Strait, Complicated by Pregnancy. C. L. Patton, Springfield, Ill.
51 Choice of Methods for Dilating the Gravid Uterus. E. P. Davis, Philadelphia.
52 Truth About So-called Maternal Impressions. A. Dixon, Henderson, Ky.
53 Retention of Drainage-Catheters. J. R. Eastman, Indianapolis.
54 Technic of the Examination of the Urine and Feces in Suspected Cases of Disease of the Pancreas. F. J. Cammidge.
55 Directions for Nurse and Home Physician, Burnside Lying-in-Hospital, Toronto. A. H. Wright, Toronto.

37. Atonia Gastrica and Cholelithiasis.—Rose points out that the treatment of gastroptosis by a plaster bandage may be the most rational prophylactic measure to prevent stasis of bile and consequently the formation of gallstones.

40. Prostatectomy.—Cumston believes that all patients should be operated on, when an absolutely aseptic catheterization for any length of time is not possible. To this class belong those who can not carry out catheterization themselves on account of senile tremor, blindness or some similar infirmity. There is also that large group in which catheterization is necessary often, or in which it is associated with pain or hemorrhage, or is rendered difficult by false passages, and so forth. In all instances in which vesical calculi are present at the same time, and result from the hypertrophy, operation should be done, otherwise recurrences of the calculi will take place, and it may be said that prostatectomy is more dangerous than lithotrity under these circumstances. Finally, all patients who have cystitis should be operated on, and last, but not least, all those in whom there is the slightest suspicion of malignancy, and in whom the disease is apparently in its early stages, should be radically treated. Perhaps the ever advancing development of surgery will make prostatectomy such a safe operation that the scope of its indications may be enlarged, but in the meanwhile the excellent work being done will be injured if surgeons persist in persuading patients, who can live comfortably for many years with a catheter life, to undergo an operation the good results of which can not always be guaranteed.

41. Obstruction of Intestine by Malignant Stricture.—Singley urges the value of extraperitoneal inclusion of malignant stricture of the intestine to be dealt with subsequently according to some of the methods that have been pointed out, especially the improved operation of Mikulicz, for the following reasons: 1, The rapidity with which the primary operation can be carried out; 2, the slight risk of infection; 3, the elimination of the danger of suture of diseased tissue, and 4, the low mortality.

42. Elephantiasis.—Rogers reports the case of a woman who had an enormous elephantiasis of both legs. Although the patient was only 5 feet in height, she weighed 248 pounds. Her thighs measured 38 and 39 inches in circumference; calves 29 and 31 inches, and ankles 29 inches. The upper part of her body was thin and scrawny. The process ended abruptly at the subgluteal fold, but the lower part of the abdominal wall was thickened and pendulous. Repeated blood examinations by day and night failed to show any filaria. Ten operations were done and after each a most decided improvement was noted.

43. Lithopedion.—Beede reports the case of a woman, aged 50, who menstruated last in July, 1905. He saw her for the first time in January, 1906, when she was suffering marked abdominal pain, most severe in the lumbar and inguinal regions. The whole abdomen was tympanitic and tender. She was vomiting, had a rapid pulse, but a normal temperature. The patient had been subjected for years to similar attacks. On vaginal examination the uterus could be outlined in the anterior portion of the pelvis to the right of the median line. Behind it, to the left, and extending in the cul-de-sac below the level of the cervix, was a smooth, hard, round mass which appeared continuous with the posterior portion of the uterus. Owing to the abdominal distension and muscular rigidity, the upper limits of the tumor could not be palpated. The mass was crowded down into the pelvis, and seemed to fill it completely. The vaginal walls were swollen and livid, and general pelvic tenderness was marked. The diagnosis of fibromyoma seemed so plausible that it was not questioned.

On opening the abdomen the nature of its growth, its flinty hardness and irregularity of surface, showed it to be a lithopedion. Without any difficulty, except that of disengaging it from the pelvis, into which it was molded like a plaster cast, the growth was removed. The adhesions to surrounding parts were slight and required no ligatures, except at the two pedicles which corresponded to the Fallopian tube at the right and the ovarian vessels at the left. The sac was distinct, but nearly transparent, thin and friable. It was ruptured in the removal of the mass. The fetus had developed to somewhat beyond the fifth month, and both it and the placenta were

rendered hard and brittle by the deposit of earthy salts. The fetal head lay low down in the Douglas pouch, and through the swollen vaginal walls presented to the examining finger the precise sensation produced by a subperitoneal fibroid in that situation.

47. **Cesarean Section for Placenta Prævia.**—Condon summarizes his paper as follows: 1. In placenta prævia centralis, when the child is alive and viable, the procedure indicated is Cesarean section. 2. The life of the unborn babe (when viable) is as much to be thought of as that of the mother. 3. The operation of Cesarean section can be done more quickly than dilatation, version and extraction. 4. The danger of a ruptured uterus and uncontrollable hemorrhage can be better overcome by section. 5. An obstetrician should not attempt a version unless he is capable of doing a Cesarean section.

48. **Premature Labor and Accouchement Forcé.**—In the series of cases reported by Williams it was thought necessary to induce premature labor in 11 and to resort to *accouchement forcé* in 100 instances, as follows: Induction of premature labor by Krause's method, 11; *accouchement forcé* by Harris' method of manual dilatation of the cervix, 83; *accouchement forcé* by Champetier de Ribes' balloon, 15; and *accouchement forcé* by vaginal Cesarean section, 2. The induction of premature labor by means of a bougie (Krause's method) was employed in all cases in which it was deemed advisable for the welfare of the mother to terminate pregnancy, but in which rapid emptying of the uterus was not necessary. Harris' method of manual dilatation of the cervix was employed in 83 instances, as follows: Eclampsia, 33; pre-eclamptic toxemia, 7; placenta prævia, 12; and danger to mother or child during the course of labor, 31; *accouchement forcé* was resorted to in 33 cases of eclampsia, with 7 deaths. As 5 of the patients did not regain consciousness after delivery their death must be attributed to the underlying disease. On the other hand, 2 patients died as the direct result of the operation, one from infection and the other from incomplete rupture of the uterus. *Accouchement forcé* by Harris' method was resorted to in 7 cases of pre-eclamptic toxemia. In each instance the cervical canal was intact and the external os not obliterated. Preliminary dilatation by means of Goodell's or Hegar's dilators was necessary before Harris' method could be employed, and the operation was usually difficult and required considerable time. Two of the patients died—one from toxemia and the other from incomplete rupture of the uterus, due to the operation.

Accouchement forcé by Harris' method was employed in 12 cases of placenta prævia, in 4 of which the cervix was intact, while in 8 the cervical canal was obliterated and the external os more or less dilated. Three patients died, 2 of whom were brought to the hospital in an exsanguinated condition, and died in collapse immediately after delivery, but in neither instance could the fatal termination be attributed to the operation, as there was no injury to the cervix. The third patient, however, died from hemorrhage following an incomplete rupture of the uterus, which resulted directly from the manual dilatation of the cervix. In 31 women who had already fallen into labor, dilatation of the cervix was completed manually by Harris' method when some condition had arisen which so seriously threatened the life of the mother or the child as to render the immediate termination of pregnancy necessary. The following indications necessitated interference: Intrapartum infection, 8; exhaustion, as indicated by a pronounced rise in the maternal pulse, 8; marked variations in the fetal heart rate, 5; prolapsed cord, 4; various indications, 6. With one exception, all the mothers recovered without difficulty, and the single death was due to profound disturbances resulting from a partial intestinal obstruction and an extensive thrombosis of the vesels of the left leg originating during pregnancy.

The Champetier de Ribes balloon was employed in only 15 instances, viz: Danger to mother or child, 12; eclampsia, 1; toxemia, 1, and placenta prævia, 1. All the patients recovered. The cervix was uninjured in 6 cases, while it was slightly or deeply torn in 3 and 6 cases, respectively. In two of the latter hemorrhage necessitated immediate repair. Vaginal Cesarean section was employed twice, once for eclampsia and once for profound toxemia associated with twin pregnancy. In both instances the operation was very successful from a technical point of view, although one of the patients died, partially from hemorrhage following uterine atony, and partially from the underlying intoxication.

50. **Ovarian Cysta.**—Patton reports 3 cases and reviews 321 cases collected from the literature.

Medicine, Detroit, Mich.
September.

56 Treatment of Non-Malignant and Non-Tubercular Skin Lesions. W. S. Newcomet, Philadelphia.
57 Cause of Sudden Death Following the Injection of Horse Serum. M. J. Rosenau and J. F. Anderson, U.S.P.H. and M.-H.S.
58 Sal-Ethyl in the Treatment of Rheumatic Affections. L. W. Bremerman, New York.
59 *Fifty Bacteriologic Tests of Hands, Brushes, Gloves, Pasteur-Filtered Water, Steam and Formaldehyde Sterilisers and Formaldehyde Disinfection of Rooms. A. Goldspohn, Chicago.
60 Obstetric Asepsis and Antisepsis. J. B. De Lee, Chicago.
61 *Significance of Hydrochloric Acid Variation in the Stomach Contents. E. J. Brown, Decatur.

59.—This article has appeared in the *Chicago Medical Recorder*, August 15, and the August issue of the *Illinois Medical Journal*.

Illinois Medical Journal, Springfield.
September.

62 Tonsillectomy by Electro-Cautery Dissection. E. Pynchon, Chicago.
63 The Ottawa Tent Colony. J. W. Pettit, Ottawa.
64 *Operative Treatment of Discharges from the Ear. A. H. Prince, Springfield.
65 *The Logic of Abdominal Pain. J. L. Wiggins, E. St. Louis.
66 *Treatment of Obesity and Its Complications. A. C. Croftan, Chicago.
67 *The Brain a Good Field for Surgery, as Shown by Its Disregard for Traumatism. C. D. Center, Quincy.
68 Rheumatism. B. Bachrach, Decatur.
69 Violent Deaths in Chicago. T. G. Allen, Chicago.

61, 66, 67.—See THE JOURNAL, June 9, 1906, page 1787.

64, 65.—See THE JOURNAL, June 23, 1906, page 1966.

New Orleans Medical and Surgical Journal.
September.

70 Sanitary Science and Quarantine. F. J. Mayer, Scott, La.
71 Yellow Fever in New Orleans, and Its Bearing on the Health of the State. J. Carroll, Washington, D. C.
72 Experiences During the Yellow Fever Epidemic of 1905. H. D. Bruns, New Orleans.
73 Vaginal Section, Indications, Limitations and Technic in Pelvic Suppuration. C. J. Miller, New Orleans.
74 Spinal Analgesia in Forceps Delivery. W. T. Richards, New Orleans.

The Medical Herald, St. Joseph, Mo.
September.

75 Fragmentary Clinical Therapy of the Static Current from the Generalist's Scrap Heap. S. G. Burnett, Kansas City.
76 *Removal of the Uterus for Chronic Inflammation. T. C. Witherspoon, St. Louis.
77 *Rachitis. A. E. King, Blockton, Iowa.

76, 77.—See THE JOURNAL, April 7, 1906, pages 1055-56.

Washington Medical Annals.
September.

78 Subconjunctival Injections in Diseases of the Eye. R. S. Lamb, Washington, D. C.
79 Dermatologic Review. S. Fry, Washington, D. C.
80 Surgery. W. A. Jack, Jr., Washington, D. C.

Journal of Cutaneous Diseases, New York.
September.

81 Dermatology as a Field for Original Research. M. B. Hartzell, Philadelphia.
82 Development of Multiple and Successive Initial Syphilitic Lesions and the Pathology of Syphilis. R. W. Taylor, New York.
83 Case of Lichen Spinulosus. J. T. Bowen, Boston.
84 Alopecia Congenita. J. Kingsbury, New York.

New York State Journal of Medicine, Brooklyn.
September.

85 Portals of Entry and Sources of Infection in Tuberculous Children. D. Bovaird, Jr., New York.
86 Preparation for the Course of Medical Study. C. F. Wheelock, New York.
87 Treatment of Rheumatoid Arthritis and Allied Conditions of the Joints. W. R. Snow, New York.
88 Still's Disease. C. P. Bull, Jr., New York.
89 History of the Medical Society of New York. (To be continued). J. J. Walsh, New York.
90 Methylene Blue in the Treatment of Inoperable Cancer. A. Jacobi, New York.

Western Medical Review, Lincoln, Neb.
September.

91 The Nebraska State Hospital for Crippled, Ruptured and Deformed Children. J. P. Lord, Omaha, and H. W. Orr, Lincoln.
92 Factors Which Have Contributed to Better Results in Gynecology and Obstetrics. P. Findley, Omaha.

Denver Medical Times.
September.

93 Treatment of Bronchial Asthma. W. A. Lamont, Denver.
94 Id. J. T. Melvin, Saguache.
95 Id. H. C. Brown, Denver.
96 Id. H. W. Hover, Denver.
97 Laboratory Diagnosis for the Practitioner. J. C. Todd, Denver.

Utah Medical Journal.
September.

98 Epilepsy in Legal Medicine. F. Clift, Provo, Utah.
99 Value of Absolute and Relative Leucocyte Count as an Aid in Medical and Surgical Diagnosis. R. Anderson, Salt Lake City.

Chicago Medical Recorder.
September 15.

100 Exploratory Laparotomy. C. E. Humiston, Chicago.
101 Membranous Rhinitis (Nondiphtheritic). C. M. Robertson, Chicago.
102 Hay Fever. W. F. Waugh, Chicago.
103 Causation and Treatment of Cataract. S. E. Wright, Marinette, Wis.
104 A Synopsis of Gout and Rheumatism. B. F. Feich, Chicago.
105 Treatment of Cystitis. J. S. Perekhan, Chicago.

Iowa Medical Journal, Des Moines.
September 15.

106 Chairman's Address, Section of Medicine, Iowa State Medical Society. E. Grimes, Des Moines.
107 Uric Acid Therapy. C. Van Epps, Iowa City.
108 Measles in Adults. W. E. Harriman, Ames.
109 Autointoxication. W. L. Hearst, Cedar Falls.
110 Diagnostic Foibles. H. A. Minassian, Des Moines.
111 Gastric Neuroses. F. J. Murphy, Sioux City.
112 Effects of Abnormalities of Eye and Ear on the Mental and Physical Development of Children. W. J. Bussey, Sioux City.
113 President's Address, Iowa Union Medical Society, Cedar Rapids. W. C. Post, Maquoketa.
114 Why Should the Medical Profession Be Thoroughly Organized? C. A. Boice, Washington.

The Journal of the New Mexico Medical Association, Albuquerque.
September 15.

115 Malaria. J. M. Shields, Perea, N. M.
116 Fracture of the Astragalus. J. B. Cutter, Albuquerque.
117 Six Cases of Fracture of the Skull. J. W. Elder, Albuquerque.
118 The Pretubercular Stage of Pulmonary Tuberculosis. C. F. Beeson, Roswell.
119 Medical Organization. S. D. Swope, Deming, N. M.
120 Drinking Water. F. T. B. Post, Las Vegas.
121 Pneumonia. R. E. McBride, Las Cruces.

The Laryngoscope, St. Louis, Mo.
February.

122 Oto-Projectoscope. M. A. Goldstein, St. Louis.
123 Use of the X-Ray in Sinus Disease. H. P. Mosher, Boston.
124 Significance of Edema of the Pharynx. J. E. Schadle, St. Paul.
125 Case of Traumatic Mastoiditis. S. Oppenheimer, New York.

Woman's Medical Journal, Toledo, Ohio.
September.

126 The Pneumococcus as a Cause of Single Multiple and General Infections. M. M. S. Johnstone, Chicago.
127 Variation in the Fat Percentage of Mother's Milk as a Factor in Feeding. L. Taylor-Jones, Washington, D. C.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.
September 15.

1 Prevention of Tuberculosis. S. G. Dixon.
2 Idem. J. Roberts.
3 *General Analogies Between Tuberculosis and Influenza. A. W. Gilchrist.
4 Doubtful Phases of the Tuberculosis Question. C. O. Probst.
5 *The Dust Problem. G. Homan.
6 Basic Factors of Present-Day Water Supply Problems. H. W. Hill.
7 Artificial Purification of Water Supplies. W. J. Robinson.
8 Water Supplies. H. D. Holton.
9 General Water Questions. T. A. Starkey.

3. **Analogies Between Tuberculosis and Influenza.**—The analogies referred to by Gilchrist are the following: 1, Both diseases have prevailed in epidemic and endemic forms; 2, tuberculosis and influenza are both respiratory diseases; 3, the respective microörganisms are aërobic and successfully cultivated in general on blood serum and hemoglobin respectively; 4, they display the same tendency in their urinary and respiratory biochemistry; 5, both are infectious diseases; neither confers immunity; in fact, both predispose to subsequent attack; 6, both distinctly affect the functions of relation (a) by exciting rheumatic symptoms, and (b) by giving rise to meningeal and nervous complications. Gilchrist closes his paper with the following statement: Influenza is a disease of ancestral respiratory function; tuberculosis is a disease affecting these functions in their more recent and actual phylogenetic stage.

5. **The Dust Problem.**—As the result of careful observation Homan is convinced that clubs, hotels and similar places, constitute a real seeding ground for tuberculosis among members, guests and employés, chiefly through the inattention or incompetency of those charged with the physical care of the latter and the business management of the institutions. The pleurisies, pneumonias, bronchial catarrhs, and cases of tonsillitis and influenza occurring among patrons and among the help of these places find sufficient explanation, according to Homan, in the local conditions, and undoubtedly these ailments prepare the way for the tuberculous infection that easily and commonly follows. He is further convinced that the disease is so common in the poorer quarters of the city because many wage-earners in clubs, hotels, etc., are drawn from such localities, and medical observation shows that after a time physical deterioration takes place among those employés most exposed to dust. The deterioration is usually evidenced by coughs and other manifestations of respiratory disease. As measures of prevention Homan advises the total banishment of broom and duster and any other implement or device by which dust is set afloat; and, if carpetings are to be retained, the adoption of mechanical appliances by the use of which no flying matter will be allowed to escape—this, if necessary, to be followed by the wiping of exposed surfaces and furniture with soft cloths. The vacuum or pneumatic method of cleaning should be made compulsory by law in every hotel, club, office building, theater, church, school and business establishment.

The Lancet, London.
September 15.

10 *Ten Years' Lunacy Treatment in Lewisham Infirmary. F. S. Toogood.
11 *Suture of Perforating Wound of the Heart; Death on the Eleventh Day. F. T. Travers.
12 Study of the Streptococci Pathogenic for Man. (To be continued.) F. W. Andrewes and T. J. Horder.
13 *The Pulse in Aortic Disease; Relation of Pulse Curves to Blood Pressure. T. Lewis.
14 The Rash in Cerebrospinal Meningitis. W. Wright.
15 *New Method of Administering an Anesthetic Through a Tracheotomy Tube. W. P. Cockle.
16 Ankylostome Parasitism Among the Native Laborers in the Transvaal. W. G. T. Pennett.
17 Urinary Calculus and Its Detection with the X-Rays. E. W. H. Shenton.
18 *Convulsions in Children and Their Relation to Epilepsy. R. O. Moon.
19 *Prophylactic Use of Antidiphtheritic Serum. W. W. Shackelton.

10. **Ten Years of Lunacy.**—Toogood details the work done in the Lewisham Infirmary during the ten years from 1896 to 1905, when 2,033 cases of alleged lunacy were admitted. Of these 1,020 patients were discharged either cured or sufficiently recovered for their friends to look after them, 804 were sent to asylums and 209 died. Alcohol was directly responsible for 471 cases (23.16 per cent.). Of these 403 patients, or 85.5 per cent., recovered; 18, or 3.8 per cent., were sent to asylums; and 50, or 10.6 per cent., died. There were 407 cases of delusional insanity. Of these 283 patients were sent to asylums, 118 recovered and 6 died. Melancholia was responsible for 223 patients, of whom 141 were sent to asylums, 81 recovered and one died (suicide). Of 149 cases of mania, 123 patients were sent to asylums, 21 recovered and 5 died. There were 83 cases of general paralysis of the insane. Of these 72 patients were transferred to asylums, 5 recovered their mental equilibrium sufficiently to be handed over to their friends, 6 died. There were 190 cases of senile dementia, with 29 commitments, 68 recoveries and 93 fatalities. Epilepsy with mental derangement supplied 112 cases. Thirty-two individuals of these were committed, 74 were sent home and 6 died in the condition known as *status epilepticus*. Other causes for admission were: Idiocy, 75 cases; temper, 19 cases; malingering, 7 cases; cardiac mania, 7 cases; delirium, 19 cases; hysteria, 48 cases; mental derangement, associated with gross brain lesions, 38 cases, and puerperal mania, 25 cases.

11. **Suture of Perforating Wound of Heart.**—Travers reports

the case of a young man, aged 19 years, who fell and was impaled on a spike fence. When taken down one hour afterward, there was found a transverse wound about two inches in length over the lower end of the sternum, through which a vertical fissure in the bone could be seen. A rent in the pericardium about two and a half inches in length was exposed, through which blood was slowly escaping. The pericardium was full of blood, which was sponged away, a piece of bone one inch by half an inch was removed, and a small spicule of bone was abstracted from the heart. A wound (admitting the tips of three fingers) was felt in the right ventricle, where another piece of bone was also felt. Its removal was followed by a terrific gush of dark blood. The wound in the heart was closed with 20 sutures. The patient did fairly well until the eleventh day, when death ensued. The cause of death was apparently failure of the heart's action due to the pressure of a clot slowly forming on its anterior surface, which also blocked the pericardial wound and prevented the escape of the blood oozing from the gap in the wound in the heart, and not directly due to a slight secondary hemorrhage. The most noticeable features of the case were the plugging of the wound in the heart by the detached fragment of sternum, which almost entirely stopped the bleeding, and the tolerance shown by the heart to the injury and the handling required at the operation. Pulsation continued regularly while three fingers were held in the wound with their tips within the cavity of the ventricle. The loss of blood was very considerable even then, but the insertion of each suture was observed to act as a very immediate stimulus, and after the insertion of the first row, when the heart's action had become very feeble, the insertion of the second superficial layer of sutures stimulated its action so that it became more regular and forcible.

13. **The Pulse in Aortic Disease.**—Lewis reports the results of an analysis of the pulse curves in 20 cases of aortic regurgitation. The frequent references made to reproductions of pulse tracings and a very excellent table make it impossible to abstract the article.

15. **Administering Anesthetic Through Tracheotomy Tube.**—In order to simplify and to make more safe his method of anesthesia, Cockle has devised an instrument which he describes as follows: The total length of the instrument is about 15 inches and it is composed of a handle, F G, and a long arm, F E D C B to A. The latter is of flexible metal from D to

Diagram of Inhaler.

A and is bent as illustrated. A is a one and a half inches square frame, which is to be covered with lint held in position by a safety pin or stitching. To use the instrument a piece of lint or similar material is stretched across the square A so as to cover it above and below and held in place by means of a safety pin. Chloroform or C.E. is sprinkled on this from a drop bottle and the part B C is rested on the sternum of the patient, so that A is above the tracheotomy tube. The limb C D to E is so bent as to bring the point E well down toward the operating table out of the way of the surgeon; E F gradually sloping up and bringing G to about the level of the patient's ear. The length of the instrument enables the anesthetist to stand well back while using it. The square A can be raised or lowered over the tracheal opening in two ways—first, as the metal at B is flexible it should be bent up to an angle of about 30 degrees; and secondly, using C B resting on the sternum as a fulcrum by merely raising or lowering the handle F G the distance of A above the tracheotomy tube can be easily adjusted from time to time, to whatever extent desired, according as less or more chloroform is to be given.

In order to replenish the anesthetic it can either be sprinkled on the lint while-*in situ* from a drop-bottle or the whole instrument can be withdrawn sideways for the purpose without trouble. The double lint on the square frame takes a good charge of the anesthetic and being double and sloping downward toward the sternum the liquid does not tend to drop on to the tracheal opening should too much accidentally run out. By this method the air-way is not encumbered and feathers can be passed into the tube at any time.

18. **Convulsions in Children.**—Moon is of the opinion that convulsions in infancy, associated with reflex causes, have a much more serious prognostic significance than is usually supposed, not only as regards the frequency of the convulsions, but still more as to the probability of future mental and moral deterioration. In 200 cases taken haphazard, carefully investigated and followed up, the prognosis as to the future moral and mental condition of the child does not appear to be any better when the first seizure is associated with a reflex cause which can be removed than when it is of idiopathic origin.

19. **Prophylactic Use of Antidiphtheria Serum.**—Shackleton subscribes to the value of antidiptheria serum used for prophylactic purposes during a school epidemic of diphtheria.

The Clinical Journal, London.
August 22.

20 Pyuria. W. P. Herringham.
21 Deformities of the Arch of the Foot and of the Toes. (To be continued.) E. M. Corner.
22 *Mechanism of the Therapeutic Action of Nitrite of Amyl. F. Hare.

22. **Action of Amyl Nitrite.**—Hare explains the therapeutic uses of amyl nitrite by its power to dilate the peripheral blood vessels. The compensations of the vascular system are such that a lowered blood pressure corresponds to increased rapidity of the heart's action and a slowing of the cardiac action means an increase of the blood pressure by constriction of the blood vessels. When the pulse rate is not affected we may assume that a dilatation of the vessels of one region is compensated by a corresponding constriction of the arterioles in another region and vice versa. This being the case, it is reasonable to suppose that when a vasodilator affords relief in a certain condition it does so by relaxing vasoconstriction either in the part itself or in other parts by which a local congestion is relieved by the fall of the general blood pressure. The beneficial effects of amyl nitrite in menorrhagia and in dysmenorrhea are explained by the disappearance of uterine congestion in consequence of dilatation of peripheral vessels and fall of the blood pressure. Hare has found that amyl nitrite administered during menstruation may stop the process. A similar action explains its utility in hemoptysis and other internal hemorrhages in which constricted peripheral vessels and high blood pressure favor the continuance of the bleeding. Rigors are accompanied by peripheral vasoconstriction and are frequently relieved by inhalations of amyl nitrite. The same is true of angina pectoris in which whatever may be the condition of the cardiac vessels those of the periphery are generally constricted. Hare explains the relief of syncope in the same way. Hay fever and asthma, he states, are occasioned by local congestions accompanied by general peripheral constriction and the relief of the peripheral spasm brings about a lessening of the local congestion. Some neuralgias, headaches and epilepsy are affected in a similar manner. This explanation of the action of the drug, Hare thinks, will indicate other uses as in angioneurotic edema, impending asphyxia and laryngeal spasm.

Presse Médicale, Paris.

23 (XIV, No. 60.) Le coup de pression (caisson disease). P. Carnot.
24 (No. 70.) Les nouvelles théories des solutions dans leurs rapports avec la médecine. S. Leduc.
25 *Sur l'origine intestinale de la pneumonie et d'autres infections phlegmasiones du poumon chez l'homme et chez les animaux. A. Calmette and others.
26 La maladie de Banti. Caillaud.

25. **Intestinal Origin of Pneumonia and Other Pulmonary Infections.**—Calmette recently announced that tubercle bacilli fed to animals in his experiments passed rapidly through the intestinal wall and were soon found in the lung, without leaving a trace of their passage. Similar tests were equally positive when finely pulverized charcoal or other insoluble particles were fed to the animals instead of tubercle bacilli.

This research was recently summarized on page 1139. He now publishes another series of tests in which pneumococci were ingested by the animals in the same way, and with the same result, that is, the pneumococci were found accumulated in large numbers in the lungs, with much congestion but no lesions. None of the animals sickened. It is probable that the animal organism is able to take care of these bacilli unless the vitality is depressed from some cause. See editorial in THE JOURNAL, October 6, page 1100.

Semaine Médicale, Paris.

27 (XXVI, No. 36.) *Les satellites de l'alcoolisme. C. Fernet.

27. The "Satellites of Alcoholism."—Fernet uses the term satellite in the second definition given in the dictionaries, namely, an obsequious dependent, ready to do any villainy for the master. The satellites of alcohol to which he refers are the intoxications of the same kind which take their place at its side and reinforce, supplement and aggravate its ill deeds. The use or abuse of stimulants of all kinds, coffee, tea, condiments, alleged tonics and pharmaceutic "bracers," has become such a habit, he states, that it is growing to be a new scourge whose dangers and their formidable consequences can not be too often proclaimed. He reviews the clinical picture of the intoxication due to abuse of essences, coffee and tea, and then that from spices and condiments. Korczynski's tests, published in 1901, failed to show that spices and condiments stimulated the gastric secretions. Neither the acidity of the gastric juice nor the secretion of the digestive ferments was increased but, on the contrary, the chemical functions of the stomach were decidedly depressed by the action of mustard, pepper, etc. The motor function, however, seemed to be somewhat promoted. Tinozzi found that cirrhosis of the liver followed administration of small amounts of pepper to dogs and rabbits for a year. Boix has succeeded in inducing experimental sclerosis of the portal type with the aid of acetic acid, butyric acid and pepper. Erythema and pruritus have been known to follow the exaggerated use of pepper. Neither of these "satellite" intoxications alone would probably prove very serious, but when the effects of several are superposed in the course of the day the matter is liable to be serious, especially in the train of alcoholic intoxication.

Archiv f. klinische Chirurgie, Berlin.

Last indexed XLVI, page 892.

28 (LXXIX, No. 2.) *Defective Closure of Jaws.—Ueber schiefen Biss in Folge Arthritis eines Unterkieferkopfchens. von Eiselsberg.

29 *Osteoplastische Verlängerung des Unterkiefers bei Mikrognathie. G. v. Auffenberg.

30 *Experimentelle Erhöhung der molekullären Concentration des Blutes (to increase concentration of blood). G. Ekehorn.

31 Ossification of Muscles After Single Trauma.—Ueber Muskelverknocherung nach einmaligem Trauma. F. Berndt.

32 *Ueber die chirurgische Behandlung des Magengeschwürs (gastric ulcer). Krönlein.

33 *Zur Nieren-Chirurgie (of kidneys). P. Clairmont.

34 *Bedeutung der Phloridzin-Methode. G. Kapsammer.

35 *Ueber mein drittes Tausend Kropf-Exstirpation (third thousand goiter operations). Kocher.

36 *Experimentelle Beiträge zur internen Therapie des Darmverschlusses (intestinal occlusion). Offergeld.

37 Experimentelle Untersuchungen über die Einwirkung der Gastroenterostomie auf das Ulcus ventriculi. Fiebig.

38 Mein neues Verfahren bei Amputation des Mammakarzinoms. I. Tansini. *See abstract, page 902.*

28. Correction of Defective Closure of Jaws.—Two cases are described in which the lower jaw had been injured by an arthritic process with the result that the teeth did not come together. In the first case, the head of the lower jaw was much enlarged and it was resected with complete success. Slight facial paresis was noticed for a few days as the only by-effect. In the second case the jaw was freely movable, but when the teeth were closed the lower jaw swung to one side as if from unilateral dislocation. The trouble was due to arthritic enlargement of the condyloid process on one side. Treatment was by resection of the part at the neck of the jaw, and the results were apparently entirely satisfactory.

29. Osteoplastic Operation on Lower Jaw for Receding Chin.—This communication, likewise from von Eiselsberg's clinic, describes 3 cases of micrognathia resulting from a bone affection in youth. The receding chin was brought out into place by an osteoplastic operation, with results most excellent both from the functional and the cosmetic points of view. The operation consisted essentially in sawing the bone apart in the shape of steps, then drawing the parts back to allow the desired space between the horizontal halves of the stumps, and fastening them in this position with silver wire. The details of the intervention are described with illustrations.

30. Effect of Dry Diet in Nephritis.—Ekehorn has been experimenting with a dry diet in cases of nephritis, and he found that while in health the specific gravity of the urine increases in proportion to a decrease in its amount, in nephritis a dry diet lowers the freezing point of the blood. The amount of urine was reduced, but the specific gravity did not rise to correspond. The kidneys were incapable of secreting a concentrated urine.

32. Surgical Treatment of Gastric Ulcer.—This address by Krönlein opened the discussion on this subject at the recent German Congress of Surgery. He has performed 112 operations on account of gastric ulcer, including 6 supplementary and 5 correcting operations on 101 patients. The mortality was 13.8 per cent., and the patients were mostly between the ages of 35 and 49. He asserts that about one-fourth of all patients with gastric ulcer, treated by internal measures, have a recurrence of the trouble, and that the mortality is about 10 to 13 per cent. The mortality of the latest series of operations on the stomach for ulcer is not more than 8 or 10 per cent. The late results are especially fine, a complete cure being accomplished in 61 per cent., essential improvement in 24 per cent., that is, remote successful results in 85 per cent. The operation promotes the healing of the ulcer; a dilated stomach returns to normal size in nearly every case, and secretory anomalies gradually become transformed to normal functioning. The operation need not aim to remove the ulcer as much as to produce more favorable conditions for its healing and for normal functioning. Gastroenterostomy is generally sufficient alone; excision of the ulcer is rarely required except on suspicion of cancer. Operative intervention, he believes, is indicated in every case of stenosis of the pylorus, whether slight or pronounced, also in functional motor insufficiency, if internal treatment fails, and also in case of small recurring hemorrhages. In case of a fulminating hemorrhage, the risk of delaying until the patient has recuperated from the loss of blood is more dangerous than an immediate operation. Gastroenterostomy in this case also is preferable to an attempt to apply direct hemostasis. There are no grounds, however, for advocating early surgical intervention in case of a simple ulcer of the stomach. Systematic internal treatment should be given a thorough trial first.

33. Surgery of the Kidneys.—Clairmont analyzes 77 operations performed on the kidneys by von Eiselsberg or under his guidance. The mortality was 21 per cent. It was found that the freezing point of the urine was not a reliable index unless it failed to vary in several examinations. The freezing point of the urine further afforded no aid for an early diagnosis. The phloridzin test was found to be more sensitive than cryoscopy. In some cases the freezing point of the urine may be found normal, but a slight delay in the elimination of sugar in response to the phloridzin test may point unerringly to functional disturbance in the kidney. In case of a gall-bladder affection, the right kidney may show delay in eliminating the sugar, consequently this tardy elimination can not serve to differentiate a kidney affection from a tumor in the right hypochondrium. Hypernephromata were found most frequently among the tumors of the kidney, and carcinoma was the rarest. Pigmentation and freckles were frequently observed in connection with hypernephroma and with this alone. Tumors that bleed readily contraindicate catheterization of the ureter on that side. The movability of a kidney tumor is an indispensable indication for its operability, although it may also be observed with inoperable growths. Resection of the kidney for a hypernephroma, even sharply circumscribed, should not be attempted. Transperitoneal nephrectomy does not allow detection of thrombosis of the vena cava nor of extensive infection of the glands. Large tumors are best removed through a lumbar incision, opening the peritoneum at the side. Lumbar laparotomy is harmless, he states, and facilitates the detachment of the mesocolon. In hydronephrosis, nephrotomy is

indicated only when causal treatment is impracticable and nephrectomy contraindicated for any reason. Pyonephrosis may be cured by nephrotomy, especially the cases in which a non-gonorrheal cystitis is the source of the ascending infection, and it is of recent development. In case of persisting fistula, etc., a secondary resection or other secondary operation may lead to a complete cure, avoiding the necessity for nephrectomy. Primary nephrectomy is indicated in case of a tuberculous process, and also when pressure on the tumor evacuates thick pus. Reflex anuria may be the result of the pains and checking of the secretion in the affected kidney. The irritation inducing the anuria is due to changes in the parenchyma which render the kidney more sensitive without materially affecting its functioning.

34. **The Phloridzin Kidney Test.**—Kapsammer found a constant regularity in the time when the sugar appeared in the urine after the phloridzin test. The findings harmonized with a regular law in more than 200 tests in his experience. After injection of 0.01 gm. phloridzin if sugar appears in the total urine in from 10 to 15 minutes, it may be assumed that one kidney at least is functionally sound. He examines the urine for sugar every five minutes. A delay of 30 minutes speaks for essential functional disturbance in both kidneys, and if no sugar h. ppeared in 45 minutes the functional disturbance in both kidneys which this proclaims contraindicates nephrectomy compl tely. In short, he proclaims that the phloridzin test gives fi 'ings that can be relied on implicitly. It is more conclusive th n even the findings with exploratory incision, as both he and . barran have observed cases of tuberculous processes or new rowths in the kidney in which the organ presented an absolutely normal aspect both externally and on exploratory sectional incision. The only exception is in case of parenchymat ous nephritis. When albuminuria and tube casts are found, the early response to the phloridzin test is not synonymous with normal functioning. The response is even prompter than in normal conditions. Changes in the functional capacity of a kidney are liable to be reflected in the varying response to the phloridzin test. This is particularly evident in a kidney injured by toxic action, especially from a diseased mate.

35. **Three Thousand Operations for Goiter.**—Kocher's last series of a thousand goiter operations has confirmed him in the view that these operations can be regarded as practically harmless, even when the goiter is low and large, and even in elderly persons, if the heart is sound. No serious infection of the wound occurred in any case. The heart functioning must be carefully tested. Even the mere lowering of the blood pressure from the standard 150 mm. to 130 renders an operation of the kind somewhat hazardous. General anesthesia is avoided if possible, as it renders it more difficult to avoid injury to the recurrent nerve. The fact that heart disturbances contraindicate an operation for goiter should induce internists not to let the affection get to this stage before advising operative treatment. Still more insistent is Kocher's warning not to produce the "goiter heart" by internal measures in cases in which from the start these offer no prospect of cure. He refers to the excessive and too long protracted use of iodids and the abuse of the thyroid preparations, which latter, he thinks, have done much more harm in the treatment of goiter than they have ever done good. The "goiter heart" is one of the main features of exophthalmic goiter. If we can prevent its development, the prognosis of operative treatment would become much more favorable. The simplest means of prevention is by early operation. It should not be deferred until a late stage, as only in the earliest stages does it give its best results. Surgeons should not be tempted to operate in exophthalmic goiter in case of existing insufficiency of the heart, such as is present in the "goiter heart" of advanced exophthalmic goiter. Only one possibility need be borne in mind in operating, that of the development of slight hypothyreosis even after partial strumectomy. It can be prevented by care that enough functionally capable thyroid tissue is left behind, or if the excision has to be extensive, the operation should be followed by thyroid treatment, which here wins its greatest triumphs.

36. **Experimental Study of Internal Treatment of Intestinal Occlusion.**—Offergeld's extensive research was directed principally to internal prevention and treatment of postoperative ileus, and to a study of the action of peristaltic drugs on the female genitalia. In case of postoperative "strangulation ileus," a second laparotomy, as early as possible, is the only salvation. If peritonitis already exists, this complication is decisive for prognosis and therapy. All measures that arouse or stimulate the action of the bowels should be strictly avoided in this case; otherwise the process is spread and rupture or perforation may follow. Peritoneal adhesions can be reached only by a second operation. The only drugs of the slightest use, he states, are those which stimulate peristalsis, eserin, nicotin, barium chlorid, used as prophylactics. Mercury is useless in all forms of postoperative ileus. Physostigmin, nicotin and strychnin work equally powerfully. Nicotin is very toxic. Pilocarpin is less active and it induces copious sweating. Barium chlorid is still less active, but it is nontoxic. In case of beginning intoxication from any of these drugs, copious saline infusion would eliminate the poison. The drugs which induce peristalsis excite the ureters, but do not affect the female genital system.

Berliner klinische Wochenschrift.

39 (XLIII, No. 29.) Die Behandlung des Puerperal-Fiebers mit Antistreptokokkenserum. E. Martin.
40 Die Blutwirkung des Vierordtschen Autohämodynamometers auf den Blutdruck (temperoid bath and blood pressure). M. Hirsch.
41 Fat and Carbohydrates.—Fett und Kohlenhydrate. G. Rosenfeld.
42 Zur bakteriologischen Früh-Diagnose der Lungen-Tuberkulose (early diagnosis from scrapings of throat). C. A. Blume.
43 Renal Surgery.—Ueber moderne Nierenchirurgie, ihre Diagnose und Resultate. H. Kümmell (Hamburg). Concluded.
44 (No. 30.) Ueber Agglutination von Bakterien der Typhus-Gruppe durch Galle (bile). T. A. Venema. Negative results.
45 *Ueber einen bemerkenswerten Fall von Tumor cerebri. H. Oppenheim.
46 Ueber die Grundlagen und Anwendung der Wright'schen Opsonin Theorie (principles and applications). L. Wolmstein.
47 *Diabetes insipidus und seine Behandlung mit Strychnin. I. Spaether.
48 Ueber Syphilis der Carunculæ sublinguales. J. Heller.
49 Ueber experimentelle Krebsforschung (cancer research). H. Beitzke.

45. **Brain Tumor.**—Oppenheim's patient was a man with attacks of paresthesia and tingling sensations, starting in the right leg and spreading upward over the entire right side, first noticed a year ago. In time these became accompanied or followed by clonic contractions and cramps. Later the symptoms appeared first in the arm each time, and finally the seizure involved the whole body, with more or less complete loss of consciousness, postparoxysmal weakness and ultimate paresis. There were no signs of compression, but there was considerable disturbance of the sense of position ("Lagegefühl"), and there was also astereognosis, that is, inability to recognize objects by handling them; this was pronounced in both right and left hands. The diagnosis made on the above findings was confirmed by the operation, which disclosed a tumor as large as a hen's egg, in the cortex, projecting into the subcortical tissues about the middle of the posterior central convolution and extending to the adjacent part of the anterior convolution of the upper parietal lobe. The tumor was easily enucleated with the fingers, and the patient is convalescing smoothly. By the fifth day it was noticed that the astereognosis of the left hand had mostly subsided.

47. **Strychnin in Diabetes Insipidus.**—Spaether reports a case of diabetes insipidus developing after an injury to the head and favorably influenced by strychnin. He suggests that the trauma must have affected the vasomotor centers governing the circulation in the kidney, with the diabetes as the result. The strychnin had favorably modified the centers in question, and thus indirectly it had benefited the diabetes.

Centralblatt f. Chirurgie, Leipsic.

Last indexed, page 1141.

50 (XXXIII, No. 32.) Zur Gallenblasen-Exstirpation (cholecystectomy). O. Witzel (Bonn).
51 (No. 33.) Curette for Removal of Gauze Grown in or Held by Tissues.—Die Curette zur nachträglichen Entfernung eingewachsener resp. eingeklemmter Gazestreifen. M. Mori.
52 Knochenhebel für Osteotomien (lever for bone). G. Hohmann (Munich).

Centralblatt f. Gynäkologie, Leipsic.
Last indexed, page 1118.

53 (XXX, No. 25. *Zur Technik der Radikal Operation grosser Nabel- und Bauchwand-Hernien (very large umbilical and abdominal hernias). E. Graser.
54 Thrombose einer Placentarhaupt-Vene. Intra-uteriner Frucht-Tod. P. Mathes.
55 Ein neuer durch Nieren-Dekapsulation geheilter Fall von puerperaler Eklampsie. G. M. Edebohls (New York).
56 Seltene Neubildungen der weiblichen Harnröhre und des Septum urethrovaginale (rare neoplasms in female urethra). H. Thomson.
57 (No. 26.) *Die subkutane Symphysiotomie. P. Zweifel.
58 Einfluss der Uterus-Nerven auf die Atonie des nicht-puerperalen Uterus. L. Fellner.
59 *Deep Incisions and Vaginal Cesarean Section Should be Banished from Obstetric Practice. L. M. Boosl.—Die tiefen Insisionen als Methode zur gewaltsamen Entbindung und der vaginale Kaiserschnitt müssen aus der geburtshilflichen Praxis ausgeschaltet werden. L. M. Boosl (Genoa).
60 (No. 27.) *Measurement of Pelvis.—Die unmittelbare Messung der Conjugata obstetrica. P. Zweifel. Id.—Eine vereinfachte und verbesserte Beckenmessung. C. J. Gauss (Freiburg). Id.—Farabeuf's Beckenmesser. O. v. Herff.
61 (No. 28.) *Das Bier'sche Verfahren in intra-uteriner Anwendung. F. Turan.
62 Vaginaler Kaiserschnitt bei der Moribunden—lebendes Kind (Cesarean section with living child). Westphal.
63 Reaction to Homologous Sperma Subcutaneously Injected.—Verhalten des Menschen bei paragenitaler Zufuhr artgleichen Spermas. W. Gassner.

53. Radical Operation of Large Hernias.—Graser has used the Pfannenstiel transverse incision with Menge's modification in four cases of extremely voluminous umbilical or abdominal hernia. The operation required three hours to complete and the numerous buried sutures with the extensive raw surfaces proved a severe test of the asepsis, but the course of healing and the results were unexpectedly fine in every instance. The sheath of the rectus muscle was incised horizontally and the upper flap turned back with the greatest care not to injure the rectus muscle below. The parts were joined without the slightest tension, and approximately normal anatomic conditions were restored. The patients were prepared in the severest cases by four or five weeks of daily purges, restricted diet, compression with bags of shot and attempts at reposition. The abdomen in the case illustrated measured 230 cm. in circumference—considerably over two yards.

57. Subcutaneous Symphyseotomy.—Zweifel does not hesitate to declare that this is an important advance in pelvis-enlarging operations. It avoids the danger of excessive hemorrhage, which is sometimes an unpleasant surprise in pubiotomy or hebotomy. He reports 3 patients thus treated, with absolutely perfect outcome, no hemorrhage to mention, smooth healing and no disturbance in the gait later. It avoids severing arteries liable to be encountered in a pubiotomy.

59. Advantages of Instrumental Dilatation in Certain Obstetric Cases.—Boasl states that he has used his dilator in 107 cases which terminated favorably for the mother in all but 5, and for the fetus in 65. Of the 42 dead fetuses 16 were dead before delivery, 9 succumbed during delivery; 17 were abortions.

60. Measurement of Pelvis.—Zweifel describes and illustrates a pelvic gauge which has proved very useful, and Gauss describes another. A third was found at Basle by von Herff, said to have originated with Farabeuf, which he has slightly modified, and recommends.

61. Suction Therapy of Interior of Uterus.—Turan's further experience has confirmed the notable benefit derived from suction applied to the interior of the uterus by means of a long, wide sound with broad slits extending from the tip to the middle of the sound. The procedure seems to be harmless, and it is certainly painless. It relieves dysmenorrhea and all disturbances consequent on chronic inflammation of the uterus. It has also a tendency to reduce the secretions in catarrhal conditions, and it promotes healing. This treatment can be given at the office, and does not interfere with the woman's usual occupations.

Deutsche medizinische Wochenschrift.

64 (XXXII, No. 34.) Ueber Behandlung der Hämorrhoiden. Riedlinger. Clinical lecture.
65 *Ein modifiziertes Mastdarm-Speculum (for rectum). H. Elsner.
66 Ueber den Diplococcus intracellularis meningitidis und seine Beziehungen zu den Gonococcen. W. G. Ruppel.
67 Ueber spezifische Immunkörper gegen Gonococcen (Immune bodies). C. Bruck.
68 Ueber die therapeutische Wirkung des Antistreptococcenserums. H. Aronson.
69 *Ueber Asthma bronchiale. Strübing.
70 Action of Carbonated Thermal Saline Baths on High Pressure.—Die Wirkung kohlensäurehaltiger Thermal-Solbäder auf den übernormalen Blutdruck. T. and F. Groedel (Nauheim).
71 Portable Washstand for Army Surgeons.—Ein neuer Waschtisch für den Operations-Raum in Feld- und Kriegslazaretten. A. Brentano.
72 Die Leukopiakie der Mundhöhle. M. Joseph.
73 Review of Progress in Obstetrics.—Ueber einige Fortschritte auf geburtshilflichem Gebiete. E. Opitz.
74 *Medical German.—Aerztedeutsch. O. Wille.
75 (No. 35.) *Zur Behandlung der Lungenschwindsucht durch künstlich erzeugten Pneumothorax. C. Forlanini.
76 Die Malaria-Monkito-Lehre und die epidemiologische Malaria-Kurve. Ruge.
77 *Zur Frage der Leydenschen Hemisystolie. O. F. Heisingius.
78 Transient Paralysis of Ocular Muscles After Spinal Anesthesia.—Augenmuskellähmung nach Rückenmarks-Anästhesie. W. Mühsam. Two cases. Id. H. Lang.
79 Zur Frage der Glykosurie bei Quecksilberkuren. O. Mendelsson. Negative Findings.

65. A New Rectal Speculum.—Elsner gives an illustrated description of the speculum in constant use at Boas' polyclinic for affections of stomach and intestines. The speculum consists of a broad flaring tube with handle and obturator. The sides of the tube are removable, leaving a long open space on each side. The speculum has several advantages over the Otis and the Kelly instruments of the kind, especially the flaring of the tube, the diameter of the outer end being twice that of the tip.

69. Treatment of Bronchial Asthma.—Strübing affirms that the first point in treatment is to train the patient to make the respiratory movements more regularly. Every unnecessary movement during expiration is avoided, allowing the elastic pressure of the lung alone to accomplish the task of expiration. An anesthetic is beneficial only because it abolishes the forced muscular contractions. When these false expiration movements are brought under control, the next step is to prolong and to deepen the inspiration, and thus gradually to restore the normal type of respiration. Success depends on the degree of intelligence, and the energy of the patient and the intensity of the catarrhal affection. It is important to train the patient's will power to exert itself, especially in the incipiency of an attack. Most patients after a little practice are able voluntarily to open all their air passages, if even for a short time. Some are able to suppress all the symptoms of asthma from the start by concentrating their attention and will power on them. Saenger advocates gymnastic exercises of the expiration to abolish the forced movements of expiration. The patients must be taught, he says, to breathe so that the expiration lasts longer than the inspiration. To accomplish this he has the patient count aloud, with a slc , moderately loud voice. Patients who at first were able to count only about 7 during expiration become able in two or three days to count from 16 to 20 without stopping. Speaking and slow reading are particularly useful in learning to control the spasmodic contraction. The iodin preparations will be found useful, he states, to soften the tenacious secretion in the bronchi. Atropin is valuable, and local lesions in the nose or elsewhere must receive treatment. The bronchial catarrh is liable to be long refractory to treatment. The vasomotor disturbances in the bronchial mucosa are among the principal factors in the asthma and require "toughening measures." The nervous system may also require treatment.

74. Medical Language.—Wille reviews a number of mannerisms and bad habits in the use of words, deprecating many of the modern word-building tendencies. He has the German language in view, but some of his remarks apply equally well to other tongues, as, for instance, his sarcastic comment on the expressions of gratitude that top off certain scientific works, gratitude to the professor under whose supervision the work was done, etc. He styles a remark of this kind a "foreign body in a scientific work." . . . "It annoys the reader as he looks for the scientific conclusions of the article and encounters this empty phrase. Such conventional expressions of gratitude can not cause the instructor much gratification—a fine scientific production is a better tribute to him than a meaningless compliment at the end of a poor article." He refers also to the custom of referring in a footnote to an already cited reference as "l. c. (*loco citato*). Looking back to find the original reference is sometimes a weary task. It would be much better, if many references are used, to collect them

at the end or beginning of the work. If only a moderate number are needed the footnote or the citation in the text should each time give the reference in full, with the page.

75. Artificial Pneumothorax in Treatment of Tuberculous Pulmonary Processes.—Forlanini in 1882 suggested the possibility of favorably influencing tuberculous processes in the lungs by artificially inducing pneumothorax, and published several communications on the subject in Italy and Germany between 1882 and 1895. His 14 years of experience have confirmed him more and more in the efficacy of this procedure. His technic differs from Murphy's, although the aim is the same—to promote healing by immobilizing the affected lung. He believes that three conditions are necessary for success, a pneumothorax large enough to ensure that the lung is positively immobilized, the gradual induction of the pneumothorax to avoid too sudden compression, and, lastly, the continuance of the pneumothorax without any interruption, the compression always remaining at the same point without fluctuating. These conditions would be ideally realized if the pleural cavity could be kept constantly connected with a tank filled with compressed air to admit a fresh supply as the air in the pleura becomes absorbed. This ideal is approximated by frequently repeated renewal of the air in the pneumothorax. He uses a special apparatus for introducing the air, two glass cylinders, connected below. The first is graduated and contains nitrogen, the second a 1 per cent. solution of corrosive sublimate. A tube from the nitrogen cylinder terminates in a fine puncture needle through which the nitrogen is injected after being filtered through cotton. An air manometer projects from the top of the cylinder, containing the corrosive sublimate, which in turn is connected with a double bulb. Oxygen is absorbed too rapidly for ordinary air to be suitable for inducing the pneumothorax. He now uses air from which the oxygen has been extracted with pyrogallic acid. About 200 or 300 c.c. of air are required to arrest all sounds of breathing in the lung, and the procedure may have to be repeated every day at first; later at much longer intervals, as the absorbing power of the pleura gradually declines. He has treated 25 patients by this means, and the results corresponded in every particular with the theoretical assumptions as to the efficacy of the measure. He has not found the involvement of the second lung a contraindication. An incipient process in the second lung frequently healed completely while the first lung was being immobilized. If both sheets of the pleura are partially or entirely grown together it is impossible to induce the pneumothorax unless they can be separated. In one case he found this artificial pneumothorax the only means of arresting uncontrollable hemoptysis. He describes the autopsy findings in one patient who had succumbed to an intercurrent affection two years after the cure of a tuberculous process by this means. In another case he kept up the pneumothorax for four years, the patient, a woman, being apparently in the best of health. During this interval she has had two febrile attacks of influenza and bronchial catarrh, but no tubercle bacilli were found in the sputum and the patient recovered as under ordinary circumstances.

77. Leyden's "Hemisystoly."—Helsingius reports in detail two cases observed at Kiev in which there was active reduplication of the apex beat. The 10 curves show the variations in the *pulsus bigeminus* and emphasize the fact that the second wave of the *pulsus bigeminus* is the consequence of the second contraction of the left ventricle following close on the first. This phenomenon appears with varying distinctness on the curves, according as the heart contracted weakly or strongly at the second systole. The findings suggested von Leyden's hemisystoly, but comparison of the various curves shows that the cases present the *pulsus bigeminus* with exceptionally instructive clearness.

Monatsschrift f. Geb. u. Gynäkologie, Berlin.
Last indexed, page 80.

80 (XXIII, No. 6.) Zur Kenntnis der Pyelonephritis gravidarum. G. Zickel.
81 Ueber heterologe mesodermale Neubildungen der weiblichen Genitalien (new growths). E. Kehrer. (Concluded.)
82 *Die sklerotischen Gefäss-Veränderungen des Uterus bei Nulli- und Multiparen und die klimakterischen Blutungen (vascular changes and climateric hemorrhage). K. Wittek.
83 *Gonorrhœ und Puerperium. A. Mayer.
84 (XXIV, No. 1.) Die Lymph-Drüsen bei der Ausbreitung des Uterus-Karzinoms. M. Cigheri. (Concluded in No. 2.)
85 Exceptionally Large Fetuses from Obstetric Standpoint.—Die ausserordentlich schweren Früchte vom Standpunkte der Geburtshilfe. A. Vaccari.
86 Zur Kenntnis der Darmstörungen der Säuglinge und der Säuglingssterblichkeit (intestinal disturbances in infants). T. J. F. Schabort.
87 Zur Pubiotomie-Frage. F. Frank.
88 Permeability of Germinal Epithelium.—Exp. Untersuchungen über die Durchlässigkeit des Keimepithels für corpuskulare Elemente und Bakterien (zugleich eine Studie über die Topographie der Bursa ovarica bei Tieren). R. Wolfheim.
89 (No. 2.) Ein höchst gradig verengtes rachitisches Becken (smallest contracted pelvis among 50,000). C. J. Bucura.
90 *Ueber Venen-Thrombosen im Puerperium. A. Rielander.
91 Akute postoperative Magenlähmung mit sekundärem Duodenal-Verschluss (paralysis of stomach). R. Birnbaum.
92 Phlebolithen in den Tuben-Fimbrien. F. Kermauner.

82. Sclerotic Vascular Changes in the Uterus.—Wittek states that in 12 cases during the last seven years he removed the uterus on account of uncontrollable hemorrhage, the presumptive diagnosis of arteriosclerosis of the vessels of the uterus being confirmed by the findings in 4 cases and by the course of the case in the others. A primary affection of the vessels—which he assumes to be arteriosclerosis on a non-inflammatory basis—was discovered as the cause of the constantly recurring hemorrhages. He is inclined to believe that such affections are more frequently the cause of climacteric and other uterine hemorrhage than is generally accepted. Ergot in such cases has an action exactly opposite to its usual effect.

83. Puerperal Gonorrhea.—Mayer reports 6 cases to sustain his assertions that puerperal gonorrhea is not always so innocent as it is generally assumed to be. There may be high fever and severe general infection with chills. The course of the infection is not specially characteristic.

90. Venous Thrombosis in the Puerperium.—Rielander states that in 6,000 maternity cases at Marburg since 1888, there have been 23 cases of venous thrombosis. The patient, especially the limb, was kept quiet, and great care was taken not to disturb the patient for any cause. The stools were artificially suppressed for several days if there was no contraindication, and a specially trained nurse was appointed to attend these patients and was repeatedly warned of the dangers of allowing any movement. If it was necessary to move the patient, enough strong arms were supplied to lift her without the slightest necessity for help on her part. With symptoms of embolism the precautions were redoubled. Digitalis might be of use if symptoms of heart weakness develop, especially given subcutaneously. The prognosis depends on the location of the thrombosis; it is better with the veins of the leg, more serious with the pelvic veins, and most dangerous with the iliac veins and vena cava, as they lead directly to the heart. In case one leg is affected first and then the other, the pelvic veins must be involved. The pulse and temperature curves are the guide to treatment. The patient must not leave her bed until they have been normal for two weeks, and then the movements must be begun very gradually.

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93 (LIII, No. 28.) Experimentelle Versuche ueber Framboesia tropica an Affen (monkeys). A. Neisser, Baermann, and L. Halberstädter.
94 *To Avoid Mishaps in Spinal Anesthesia.—Wie vermeidet man Misserfolge bei der Lumbalanästhesie? A. Dönitz.
95 *Erfahrungen an 300 Lumbalanästhesien mit Stovain-Adrenalin (Billon). E. Deetz.
96 *Operationen mit Rückenmarksanästhesia (spinal anesthesia). E. Becker.
97 *Ueber eine neue Methode der Blut- und Gewebe-Färbung mit dem essigsauren Methylenblau (stain for blood and tissues). O. Assmann.
98 *Beitrag zur Agglutinations-Technik. W. Gaehtgens.
99 *Non-Recognition of Mental Affections.—Verkennung von geistigen Erkrankungen. G. Dreyfus.
100 Zur Entstehung und Verhütung chronischer Diphtherie. L. Grunwald. One case.
101 Ueber Lippen- resp. Mundwasser-Ekzeme. Galewsky.
102 Ueber das Verhalten der im Blute der Typhuskranken nachweisbaren Typhusbazillen gegenueber der bakteriziden Wirkung des Blutes. H. Conradi.
103 *Professional Syphilis and Accident Insurance.—Syphilis und Unfallversicherung der praktischen Aerzte. Jesionek.

94-96. Spinal Anesthesia.—Dönitz sifts the literature that has appeared on the subject of spinal anesthesia, pointing out the causes of the mishaps and failures, and the errors most liable to occur in technic. He discusses the fatality reported by Bosse in which a patient died in the night after a second

amputation of the leg under stovain anesthesia. Autopsy revealed nothing abnormal except multiple subpleural ecchymoses. Bosse accepts them as characteristic for asphyxia, and attributes the death to direct paralysis of the medullary centers by the chemical poison. Dönitz criticises this verdict, as subpleural ecchymoses are observed also in cases of death from heart failure and from fat embolism. The long interval before death suggests fat embolism rather than paralysis of the respiratory center from the anesthetic. Experiments on animals and 4 cases in which transient paralysis of the respiratory center was observed, all concur in the almost immediate onset of the paralysis after administration of the anesthetic. An interval of hours is altogether out of the question. Some of the symptoms observed in the case also suggest fat embolism after the operation on the leg. One fatality has occurred at the Bonn clinic in 1,000 applications of spinal anesthesia. The patient was a man of 75 with cancer of the penis. Owing to the extent of the contemplated operation 2.6 times the standard dose of the anesthetic was injected and in other points the prescribed technic was not adhered to. Tropacocain to the amount of 0.13 gm., diluted with 10 c.c. of the patient's own cerebrospinal fluid, was injected between the second and third lumbar vertebræ, the patient seated, and he was then laid horizontally. The anesthesia spread rapidly up to the neck. After a few minutes there was complete arrest of the respiration and pulse. The thorax was found so stiff and rigid that artificial respiration was very difficult, and it proved unable to resuscitate the patient, even after an opening had been made into the trachea. The lungs were adherent to the chest wall. The anesthetic preferred at the Bonn clinic is 0.04 gm. stovain, except when the anesthesia is required at a high level, when 0.05 tropacocain is substituted on account of the danger of respiratory paralysis. The patient is then laid flat when the operation is not above the perineum, or the pelvis is at once raised for operations on higher regions. A minute or two after the injection the reflexes are tested and the pelvis raised or lowered to correspond, the knee and cremaster reflexes for operations below the groin, the three abdominal reflexes for higher fields. It is also determined whether pinching the leg causes as much pain as pinching the neck, for example. The anesthesia reaches its maximum in about five minutes.

Deetz reports 399 cases in which operations were performed under spinal anesthesia with 0.06 gm. stovain in combination with a suprarenal preparation. One patient, a much debilitated man of 72 with acute peritonitis, succumbed to arrest of the respiration six minutes after the anesthetic had been injected. Another patient died of appendicitis five weeks after the anesthesia. No inconveniences of any kind were observed in 52.6 per cent. of all the patients, but headache followed in 50, very severe in 8, but never lasting more than three or four days, except in one patient who had headache for two weeks, and a man who still has headache after six weeks. The communication issues from Müller's clinic at Rostock.

Becker relates the similar experiences at Hildesheim with spinal anesthesia in 81 abdominal operations, 20 on the perineum or vicinity and 34 on the legs. No by-effects were noted in the majority of cases, and headache has become much less frequent since the practice has been adopted of having the patients sit up in bed after the operation to prevent congestion in the head. Serious symptoms were observed in 2 cases; in one the patient still complained of headache and pain on movement with occasional vertigo three weeks after the operation. She was a consumptive diabetic of 47 requiring an operation on account of suppuration after amputation of the leg.

97. Methylene-Blue-Eosin Stain for Blood and Tissues.—Assmann presents a staining technic which for nearly a year has given most excellent and constant results in his hands, not only in staining dried specimens of blood, pus, sputum, urinary sediments, etc., but also for sections of tissues. It seems to be free from the drawbacks of other stains of the kind. The dried specimen, without fixation, is placed on an object glass and this in turn is placed in a Petri dish. About 40 drops of the stain, the methyl alcohol solution of eosin-methylene blue, are then poured on the preparation, the fluid being kept on the object glass. After three minutes in the stain 20 c.c. of distilled water is poured over the specimen, after 5 drops of a 1 per thousand solution of potassium carbonate have been mixed with the water and the Petri dish is shaken until the fluid assumes a clear, homogeneous, bright violet color. In five minutes after this the specimen is removed and dried without further rinsing. For sections of tissues the first step of the process is the same but, instead of the potassium carbonate, 5 drops of a 1 per thousand solution of acetic acid are added to the 20 c.c. of distilled water poured into the Petri dish over the specimen. It is left in the fluid for fifteen instead of five minutes, and is then rinsed in alcohol, then in xylol and embedded in neutral Canada balsam. The alcohol must be absolutely free from water. The details are brought out much more clearly and more evenly than with the May-Grünwald or other technics, he asserts.

98. Improved Agglutination Test.—Gaehtgens describes a method with which the agglutination test can be completed in ten minutes. The findings were always confirmed by control tests by other technics. A test-tube containing—as usual—the patient's serum, suspension of bacteria and salt solution, with the serum diluted 1 to 100, is centrifugalized for ten minutes and then shaken up three or four times. In the control test-tube some of the bacteria will be found accumulated in a small sediment at the bottom of the tube, the patch being about 2 mm. in diameter. Shaking the tube breaks up this mass, so that in the hanging drop under the microscope only isolated, freely motile bacteria are visible. The same picture is offered in case of negative findings with the patient's serum, but in case it possesses agglutinating properties the bacteria, clumping in flakes, will be found deposited around the central patch of sediment, sometimes dotted around it and sometimes forming a single mass of sediment several times as large as that in the control tubes.

99. Non-Recognition of Mental Affections.—Dreyfus classifies mental affections as those that may be insidious and never recognized, and those in which the progress of the affection compels its recognition sooner or later. He reviews the symptoms of the early phases of various types in each group, remarking in regard to paralysis that at first it is generally taken for neurasthenia, but that differentiation is now easy by means of lumbar puncture. In arteriosclerosis there are only one or two or no lymphocytes to be found in the cerebrospinal fluid; with syphilis there are about 17, but with paralysis from 40 to 50 or even more are discovered in the field. This proportion was found practically constant in 132 lumbar punctures made on 102 patients with paralysis. Frequently the puncture findings were the only clue to the paralysis. The only dubious findings were in case of preceding syphilis or existing meningitis. Other symptoms that should suggest paralysis are change in character in middle-aged persons, with irritability and temper, slight weakness in judgment and memory and restlessness.

103. Professional Syphilis and Accident Insurance.—The physicians of Germany, under Neisser's lead, are taking concerted action to obtain more consideration in case of professional infection with syphilis. The companies in which they have been insured against such contingencies have too frequently managed to escape paying the contracted indemnity. Jesionek relates the case of a physician in a small town who contracted syphilis from a scratch during an obstetric operation. The company paid the indemnity for the transient sickness consequent on the primary symptoms, but at the close of the year canceled his policy. He is still in good health and has shown no signs of tertiary trouble, but he appealed to the courts against the canceling of the policy, stating that the company—in which he had carried insurance for 20 years—should be held responsible for any tertiary trouble that may develop later from the syphilitic infection. This the company will not agree to, and it will not reinsure him unless at a higher rate on account of his infection, and only under the agreement that if any other accident occurs to him the indemnity shall not be any higher than if it affected a non-syphilitic person. All the insurance companies in Germany take this stand, and the courts state that the contracts as at present worded and signed by physicians uphold them in these rights.